## Chris Mattmann, Ph.D.


CONTACT INFORMATION

**Chief Data & Artificial Intelligence Officer (CDAIO)**
UCLA Digital & Technology Solutions (DTS)
10920 Wilshire Boulevard, Los Angeles, California 90024
*Voice:* (818) 862-2504
*E-mail:* chris@mattmann.ai
*WWW:* `https://mattmann.ai`

University of California, Los Angeles (UCLA)
Office: Suite 1100
*Fax:* (818) 862-2504


RESEARCH INTERESTS

Software Architecture, Software Engineering, Search Engines, Information Retrieval, Resource Discovery, Distributed Computing Platforms, Large-scale, distributed systems, Data modeling, design and development of distributed data intensive systems.

EDUCATION

**Harvard Kennedy School**, Boston, MA USA

Executive Certificate, Public Policy (Climate Change, Economics and Policy), October 2023

**University of Southern California**, Los Angeles, CA USA

Ph.D., Computer Science, August 2007

- Dissertation Topic: "Software Connectors for Highly Distributed and Voluminous Data-intensive Systems"
- Advisor: Nenad Medvidović
- `https://github.com/chrismattmann/disco`

M.S., Computer Science (Multimedia and Creative Technologies), August 2003
B.S., Computer Science, December 2001

PROFESSIONAL EXPERIENCE

**University of California, Los Angeles (UCLA)**, 10920 Wilshire Boulevard Suite 1100, Los Angeles, California 90024

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|---|---|
| *Chief Data & Artificial Intelligence Officer (CDAIO)* | **June 2024 - present** |
| *JIFRESSE Associate Project Scientist III* | **July 2019 -April 2025** |
| *JIFRESSE Associate Project Scientist* | **October 2015 - July 2019** |
| *JIFRESSE Visiting Researcher* | **March 2012 - October 2015** |

The University of California, Los Angeles (UCLA) hired me as an innovative and accomplished leader to serve as the first Chief Data & Artificial Intelligence (AI) Officer (CDAIO) reporting to the Associate Vice Chancellor and Chief Information Officer (CIO). In this groundbreaking role, the CDAIO will be responsible for discovering opportunities to leverage advanced data, analytics, and artificial intelligence across the campus community, collaborating and enabling the organization to pursue innovations in data and AI, and advancing the university's capabilities through internal and external partnerships. The CDAIO will play a pivotal role in creating the strategy and roadmap for AI innovations, establishing practices to monitor the value of the portfolio of AI investments, coordinating with technology platform and tool owners to enable innovation, and ensuring ethical and responsible practices. They will partner with university leaders, technology owners, and third-party organizations on AI initiatives to orchestrate the design and deployment of AI technologies, develop legal, risk, and compliance objectives for the use of AI, and measure the operational and financial impact of AI investments delivering quantifiable results. This position will influence the future of UCLA through the adoption and utilization of technological innovation. The Chief Data & Artificial Intelligence Officer will positively impact UCLA's operations and culture by protecting University stakeholders' information and data in service of the institution's academic mission. This leader will partner to advance the University's mission by delivering exceptional service comprehensively and consistently across faculty, staff, and students. This role will execute UCLA's vision while modeling

UCLA's culture and values. The data and artificial intelligence efforts will be focused on discovering opportunities to leverage advanced data, analytics, and artificial intelligence opportunities across the campus community, collaborating and enabling the organization to pursue innovations in data and AI, and advancing the university's capabilities through internal and external partnerships.

Also part of the UCLA Joint Institute for Regional Earth System Science and Engineering. Appointed visiting researcher in the JIFRESSE institute, closely associated with JPL. Investigator on NSF proposals in the area of Regional Climate Modeling and Evaluation. Collaborated closely with Dr. Duane Waliser, JIFRESSE Fellow, and Dr. Jinwon Kim, expert in the area of regional climate modeling.

**Defense Advanced Research Projects Agency (DARPA)**, 675 North Randolph Street, Arlington, VA 22203-2114

*Principal Investigator and Government Test and Evaluation (T&E) Lead* **July 2012 - present**

Principal Investigator and Government Test and Evaluation (T&E) lead role on over a half a dozen Information Innovation Office (I2O) and Strategic Technologies Office (STO) programs. Presented to DARPA Director Dr. Stephen Walker on strategic technologies, and represented national labs and several of the world's most impactful technology transitions including Apache Spark, D3, Python, and other technologies making them available broadly as open source and viable for commercial consumption. Full list of programs participated in includes:

- XDATA
- MEMEX
- Data Driven Discovery of Models (D3M)
- Active Social Engineering Defense (ASED)
- GCA (Geospatial Cloud Applications)
- Learning with Less Labels (LwLL)
- AMP (Assured Micropatching)
- SafeDocs
- Critical Mass (Pre Program work)

**Mattmann.AI, LLC**, 12100 Wilshire Blvd Suite 800, Los Angeles, CA 90025

*President & Co-Founder* **August 2023 - present**

As the President and Co-Founder of Mattmann.AI, LLC, I provide strategic direction and consulting services to companies looking to deploy artificial intelligence (AI) as a business and goto market strategy. I provide keynote speaking services in AI, have keynoted the 3 major state bar associations in California, New Jersey and New York, and also elsewhere. I provide legal and expert witness services in AI, including consulting in the entertainment industry which will be heavily impacted already by the technology. And finally I help companies with business strategy related to deploying AI at their organizations.

**NASA Jet Propulsion Laboratory, California Institute of Technology**, Pasadena, CA 91109 USA

*Chief Technology & Innovation Officer (CTIO)* **February 2021 - June 2024**
*Division Manager, Artificial Intelligence, Analytics, and Innovation Organization*, **May 2020-June 2024**
*Manager, Chief Technology & Innovation Office*, **April 2020-May2020**
*Deputy Chief Technology & Innovation Officer (CTIO)* **September 2019 - April 2020**
*Associate Chief Technology & Innovation Officer (CTIO)* **January 2018 - September 2019**
*Manager, Technology User Evaluation and Infusion Office* **November 2018 - September 2019**
*Manager, IT Advanced Research and Open Source Office* **January 2018 - September 2019**
*Manager, NSF Program Office* **January 2017 - June 2024**

*Principal Data Scientist, Engineering Administrative Office* **October 2016 - January 2018**
*Manager, Open Source Projects Formulation and Development Office* **August 2016 - September 2019**
*Principal Designation (Data Science)* **January 2015 - June 2024**
*Chief Architect* **January 2014 - October 2016**
*Software Architect V* **September 2013 - September 2019**
*Software Architect IV* **September 2011 - September 2013**
*Senior Computer Scientist* **September 2008 - December 2014**
*Cognizant Development Engineer* **August 2007 - September 2019**
*Member of Key Staff* **September 2006 - September 2019**
*Staff Software Engineer* **September 2005 - September 2008**
*Associate Software Engineer* **January 2001 - August 2005**

At JPL I was the Chief Technology and Innovation Officer (CTIO) and Division Manager, Artificial Intelligence, Analytics, and Innovation Organization in the Information Technology and Solutions Directorate (ITSD). I managed the laboratory division responsible for advanced IT research, open source and technology evaluations, and partner infusion capabilities for the Information and Technology Solutions Directorate. As an additional duty, I also managed formulation and development of strategic non-NASA and NSF open source projects with a focus on agile software development process. My organization focused on pursuing projects and developing new capabilities that leverage open source software and meet strategic JPL technology needs. In addition we are concerned with agile software development methods for non-NASA sponsors including technology infusion, prototype development and curation, and identification of strategic open source software. The objective is to rapidly infuse new open source capabilities into multiple JPL thematic technology areas. I was awarded the designation of JPL Principal (focus area *Data Science*) to recognize sustained outstanding individual contributions in advancing scientific or technical knowledge, or advancing the implementation of technical and engineering practices on projects, programs, or the Institution and I am JPL's *first* Principal in this area. From 2018-April 2020, I was Deputy CTO and Manager of the Chief Technology & Innovation Office. From 2016 - 2017 I was a Principal Data Scientist in the Engineering & Science Directorate's Engineering Administrative Office (EAO). From 2014 - 2016, I was the Chief Architect of Instrument Software and Science Data Systems Section. As a member of Section Staff, I had the responsibility for influencing science data system designs and facilitating the infusion of new technologies to meet our future challenges. Over the last 24 years, I have developed reusable science data processing system for the Orbiting Carbon Observatory, NPP Sounder PEATE, SMAP, and DESDynI Earth Science missions. The software that I initially created, Apache Tika, has been one of the two linchpin technologies (the other being Apache Solr, which I have materially contributed to) to analyze and help expose the Panama Papers worldwide controversy. My group of over 50 individuals is supported by a funded portfolio of over $150+M dollars and is sponsored by grants and agreements with DARPA, NASA, DHS, DoD, NSF, NIH, and commercial sponsors in the area of information retrieval and data science.

**University of Southern California, Viterbi School of Engineering**, Los Angeles, CA 90089 USA

*Adjunct Professor of Computing Practice* **November 2024 - May 2025**
*Adjunct Research Professor* **April 2021 - October 2024**
*Director, Information Retrieval & Data Science Group* **November 2015 - May 2025**
*Adjunct Associate Professor* **November 2013 - April 2021**
*Adjunct Assistant Professor* **November 2008 - November 2013**
*Part-time Faculty* **November 2007 - November 2008**

Adjunct Research (Full) Professor. Taught and developed DSCI 550: Data Science at Scale and INF 550: Informatics at Scale courses. Taught and developed CSCI 599: Content Detection and Analysis for Big Data course. Taught graduate level course in Software Architectures (CSCI 578) to a class of over 60 students, including remote professionals. Taught both a distance education (DEN) lecture, as well as on-campus version of the class. Developed syllabus for and taught course in Information Retrieval and Search Engines (CSCI 572) during Summer 2010, 2011, Spring 2013, spring 2014, Fall

2014, Spring 2015, and Fall 2015 semesters. Participated in writing proposals to the U.S. National Science Foundation, and other agencies. Participated in program committees and reviewed papers for various prestigious international conferences incl. the ACM WWW 2009 conference, ICSE, and ASE, and journals including the Journal of Systems and Software, and IEEE Transactions on Software Engineering and IEEE Transactions on Dependable and Secure Computing. Participated and led paper writing efforts to ICSE and other conferences. Mentored and collaborated with several software architecture Ph.D. students. Established a successful research and industry collaboration with NASA JPL and USC.

**The Sporting Tribune, LLC**, 215 Arena St, El Segundo, CA 90245

*Chief Technology & Innovation Officer* **September 2022 - present**
*Chief Financial Officer* **September 2022 - January 2025**
*Co-Founder* **September 2022 - present**
Head of technology innovation and co-founder at The Sporting Tribune, where Los Angeles, Las Vegas and Hawaii sports media converge. Real reporters, real coverage, that represents the most diverse region in sports. Head of web3 and the intersection of sports technology and experience. See `https://www.barrettsportsmedia.com/2022/09/14/the-sporting-tribune-debuts/`. Managed finances including accounts payable/receivable, budget/strategy, and technology platform selection. Handled PayPal, Chase Business Banking, ACH/Wire, bill pay, and business/legal documentation for start-up.

**Seven Bridges Genomics**, 529 Main St, Suite 6610. Charlestown, MA 02129

*Interim Chief Technology Officer* **January 2021 - June 2022**
*Member of the Board of Advisors* **January 2020 - September 2022**
Began as founding member of Scientific Advisory Board (SAB) and reported directly to CEO William Moss. Managed team of approximately 150 technical staff split across Los Angeles, Boston, and Slovenia in multiple time zones including operational budget of $15M. Advised CEO and executive staff through transition of former CTO and to selection of full time CTO in 2022. Helped spinout company Unified Patient Network `https://www.hcinnovationgroup.com/clinical-it/genomics-precision-medicine/news/21252271/washington-u-school-of-medicine-is-first-member-o` and helped found and exit company now part of Velsera, Inc. Interim Chief Technology Officer (CTO) for Seven Bridges and reported directly to the CEO William Moss. Began as founding member of Scientific Advisory Board (SAB) and reported directly to CEO William Moss. Managed team of approximately 150 technical staff split across Los Angeles, Boston, and Slovenia in multiple time zones including operational budget of $15M. Advised CEO and executive staff through transition of former CTO and to selection of full time CTO in 2022. Developed and led strategy and management of the Technology Pillar of the Unified Patient Network (UPN) project, including technology stack, architecture, design, engineering, and implementation.

**Celgene Corporation**, 1500 Owens St, Ste 600, San Francisco, CA 94158

*Senior Technology Advisor* **April 2015 - November 2019**
Senior Adviser reporting directly to Executive Director, Informatics and Knowledge Utilization and also reported to Vice President, Informatics and Knowledge Utilization. Worked with Vice President, Informatics and Knowledge Utilization at Celgene and Executive Director to build out the data science discipline and practice at Celgene and to construct Research and Early Discovery of Data Assets (REDDA) system that supported entire company for data science, data model development, search, and retrieval of research and early discovery assets. Built data practice at Celgene. Helped build data team including 10 direct reports who partnered with scientists and informatics personnel at Celgene to construct information systems that support search and discovery of science data assets. Ran data governance board in partnership with Executive Director and VP. Identified and helped deploy LabKey research information sample management system at Celgene. Partnered with LabKey and Celgene scientists to install the Software as a Service (SaaS) toolkit and provide training to the team. Made LabKey accessible as a web asset. Deployed the IsaTab toolkit for study

and protocol management and converted all of Celgene's protocol data to IsaTab format. IsaTab is an international standard toolkit for study and protocol information management. Connected IsaTab and LabKey together to provide full science data and protocol tracking as part of the eventual REDDA system. Deployed operationally the Research and Early Development Data Assets (REDDA) platform across 1000s of scientists that allowed access to data from the research and early development data access team to the entire company. REDDA combined LabKey, IsaTab, Apache Solr search Apache Tika, and Apache UIMA, and custom Java and AWS Cloud platform solutions to develop an enterprise solution for searching, and linking to Celgene data assets that is still in internal use by Celgene today.

**National Aeronautics and Space Administration, Earth Science Data System (ESDS) Working Groups**, Washington, DC 20546-0001 USA

*Chair, Geospatial Working Group* **January 2013 - January 2016**
*Chair, Open Source Working Group* **January 2013 - January 2016**
*Chair, Software Reuse Working Group* **October 2009 - January 2013**

Responsible for setting direction of software reuse for Earth science data systems research and making recommendations to NASA regarding identification, infusion, and dissemination of reusable assets. Organize telecons, meetings, and participate in reviews with NASA HQ program officers in Earth science research. Inform other working groups, including Software Metrics, Technology Infusion, and Software Process. Broadly advocate, and disseminate software developed on NASA Earth science data system missions, as well as in Distributed Active Archive Centers (DAACs) and downstream data analysis research projects (MeASURES and ACCESS).

**Apache Software Foundation**, Forest Hill, MD USA

*VP, Data Privacy, Apache Software Foundation* **August 2018 - January 2019**
*VP, Legal, Apache Software Foundation* **May 2017 - September 2018**
*Vice Chairman, Apache Software Foundation* **August 2016 - May 2017**
*Director, Apache Software Foundation* **May 2013 - March 2018**
*Treasurer (Executive Officer), Apache Software Foundation* **August 2012 - May 2016**
*Member, Apache Software Foundation* **March 2010 - January 2019**
*VP, Apache OODT, OODT Project* **November 2010 - March 2013**
*VP, Apache Tika, Tika Project* **April 2010 - August 2012**
*Project Management Committee, Gora Project* **January 2012 - January 2019**
*Project Management Committee, Incubator Project* **April 2010 - January 2019**
*Project Management Committee, Nutch Project* **April 2010 - January 2019**
*Project Management Committee, Tika Project* **April 2010 - January 2019**
*Project Management Committee, Lucene Project* **October 2009 - May 2010**
*Committer and Co-Founder, Tika project* **March 2007 - January 2019**
*Committer, Nutch project* **October 2006 - January 2019**

ASF Board of Directors for a term of five years - re-elected five separate times. Served in a variety of officer roles including inaugural VP of Data Privacy, VP, Legal, Vice Chairman, and Treasurer. Took over as ASF Treasurer, responsible for managing foundation's bill paying, tax filing and other financial responsibilities. Voted to become the *first NASA* member of the Apache Software Foundation, helping to steer and set the direction for the overall ASF. Voted to be a Project Management Committee (PMC) member of the Apache Lucene project. Apache Lucene produces software for enterprise search and information retrieval, facet-based data-discovery, content detection, analysis and large-scale, distributed data mining algorithms. Provide project direction and leadership, vote on project releases, help guide community including 1000s of developers around the world. Developed original proposal and plan for Tika, a content analysis toolkit, in collaboration with existing Apache Nutch committer Jerome Charron. Tika provides a framework for content analysis and metadata extraction. Led the ascension of Tika into Apache Top Level Project (TLP) status. Tika release manager for the 0.1-incubating, 0.3, 0.4, 0.5, 0.6, 0.7 and 0.8 releases. Contributed several patches to Nutch, most notable were an RSS Parsing plugin, a complete redesign of the ParserFac-

tory, Metadata container support, and an automacially generated web context file, including web parameter support to the Nutch webapp. Most of this work was done in collaboration with existing committer Jerome Charron. Nutch release manager for 0.9, 1.1 and 1.2 releases. Contributed CombiningTokenFilter for Apache Lucene that allows sorting on string titles that includes stop word removal, stemming, and synonym analysis on sortable fields. Contributed several patches to Apache SOLR during this time, committed during the 1.5 release cycle, and also contributed to what eventually became Apache Hadoop. Championed Incubator projects including OODT, SIS, Lucy, Gora, MRUnit, and Any23.

**211 Los Angeles County, Management Information Systems**, San Gabriel, CA 91778 USA

*Chief Research & Data Officer* **October 2016 - present**
*Chief Technology Officer* **August 2013 - December 2014**
*Architect* **January 2012 - August 2013**
*Independent Consultant* **January 2008 - January 2012**
Advised on redesign of customer call center system. Provided architectural support and requirements guidance for the development of a "wizard" installer component for the three major subsystems of the customer call center redesign. Implemented installer component using topical PHP 5 programming language and PEAR installation framework. Implemented agency and resource service Google-like search for use by customer resource agents (CRAs). Lead developer of search redesign in customer call center system. Lead developer of GIS search capability using advanced geocoding techniques. Architect for system redesign and operational call center, inquiry system and full 211 IT end to end development. Appointed Chief Technology Officer in Summer 2013 to assist in advising 211 Executive and C-suite on IT portfolio, strategy, assist in recruiting and strategic relations with partners. Appointed Chief Research Officer to create 211 data market.

**E50.com, Inc, Web Development and Engineering**, Hollywood, CA USA

*Senior Software Consultant* **September 2000 - August 2003**
Led software development and backend engineering for a major Internet hosting and development company that serviced over 500 web sites. Utilized Microsoft technologies incl. ASP, MS SQL Server and engaged in requirements gathering and interaction with customers and end-users. Designed and implemented several web sites including http://snookies.com.

**Iwin.com, Inc, Engineering Team**, Westwood, CA USA

*Engineering Intern* **February 2000 - August 2000**
One of about 4 interns tasked with developing Java-based games for target demographic of 35-55 year old adults. Participated in software design and development, constructed query result caching mechanism that optimized DB query time against MS SQL Server by 25%. Helped formulate ranking algorithm for games listed on the site.

## Honors, Awards & Certifications

ADWEEK The AI Trailblazers Power 100 Are Building the Future
`https://www.adweek.com/brand-marketing/ai-trailblazers-power-100-2025-building-the-future/`

UC People Management Certificate
`https://chr.ucla.edu/training/uc-people-man-cert`

SCI Journal Top 16 Famous Data Scientists That You Should Know, 2024.
`https://www.scijournal.org/articles/famous-data-scientists`

LA Business Journal 40 Thriving in their 40s, 2022.
`https://labusinessjournal.com/advertorials/thriving-their-40s-chris-mattmann/`

CNVRG.IO World's Best Data Scientists List 2020.
`https://cnvrg.io/best-data-scientists/`

JPL Team Award, USC Capstone Partnership - JPL/USC, Instrument Software and Science Data

Systems, 2016.

JPL Bonus Award, Outstanding Individual Contribution, Instrument Software and Science Data Systems, 2014.

Ticke's Notable Scientists List
`https://twitter.com/ticckle/lists/notable-scientists`, 2014.

NASA Group Achievement Award, Early Detection and Research Network (EDRN), 2011.

SoftArtisans 30 Hadoop and Big Data Spelunkers Worth Following List
`http://bit.ly/vEUQre`, 2011.

JPL Mariner Award, Outstanding Individual Contribution, Instrument Software and Science Data Systems, 2011.

West Federal Labs Consortium Outstanding Partnership Award, NASA ARRA Water Resource Management Project, 2011.

First NASA Member of the Apache Software Foundation (ASF), 2010.

NASA Team Award, Orbiting Carbon Observatory (OCO), 2009.

NASA Group Achievement Award, Planetary Data System (PDS), 2008.

NASA Software Reuse WG Peer-Recognition Award (OODT CAS), October 2008.

NASA Space Act Award (OODT CAS), September 2008.

NASA Team Bonus Award, Orbiting Carbon Observatory (OCO) mission, September 2008.

NASA Tech Briefs Award (OODT CAS), October 2007.

NASA Group Achievement Award, Planetary Data System (PDS), October 2007.

NASA Group Achievement Award, Object Oriented Data Technology (OODT) project, October 2007.

SIGSOFT CAPS Travel Scholarship, Doctoral Symposium, ASE, Tokyo, Japan, July 2006

Travel Scholarship, Doctoral Symposium, ICSE , Shanghai, China, May 2006

Teaching Assistantship Award, Department of Computer Science, USC, September 2003, February 2004, September 2004, January 2005, January 2007

Dean's List Recipient, School of Engineering ,USC, 1999

## Academic Experience

**University of Southern California**, Los Angeles, California USA

*Adjunct Professor of Computing Practice* **January 2025 - May 2025**
*Adjunct Research Professor* **April 2021 - January 2025**
*Director, Information Retrieval & Data Science Group* **November 2015 - May 2025**
*Adjunct Associate Professor* **November 2013 - March 2021**
*Adjunct Assistant Professor* **November 2008 - November 2013**
*Part-time Faculty* **November 2007 - November 2008**

Incepted and regularly taught DSCI 550: Data Science at Scale from 2021-2025. Developed new CSCI 599: Content Detection and Analysis for BigData course. Taught graduate level course in Software Architectures (CSCI 578) for 5 years to a class of over 60 students, including remote professionals. Taught both a distance education (DEN) lecture, as well as on-campus version of the class. Taught a graduate course in Search Engines and Information Retrieval (CSCI 572) during the Summer 2010, 2011, Spring 2013, spring 2014, Fall 2014, Spring 2015, and Fall 2015 semesters. Significantly upgraded course lecture material and devised open-source, innovative crawling, parsing, and geo-location set of assignments for the course.

*Graduate Student* **August 2002 - December 2007**

Includes Ph.D. research, Ph.D. and Masters level coursework and research projects. Active partici-

pant in proposal writing to funding agencies such as NASA, NSF, and the NIH.

*Teaching Assistant* **September 2003 - May 2007**
TA for graduate level courses on Software Architectures, Software Engineering for Embedded Systems, and Operating Systems. Shared responsibility for lectures, exams, homework assignments, and grades.

- CSCI 578: Software Architectures, Spring 2005, Spring 2007
- CSCI 589: Software Engineering for Embedded Systems, Fall 2004
- CSCI 402: Operating Systems, Fall 2003, Spring 2004

*Senior Grader* **September 2001 - August 2003**
Senior grader for graduate and undergraduate level courses on Issues of Programming Language Design and Programming the WWW. Shared responsibility for exams, homework assignments, and grades.

- CSCI 571: Issues of Programming Language and Design, Spring 2001, Summer 2003
- CSCI 351: Programming the WWW, Fall 2001, Spring 2002

**University of California Los Angeles**, Los Angeles, California USA

*Associate Project Scientist* **March 2013 - April 2025**
*Visiting Researcher* **March 2012 - March 2013**
Associate Project Scientist in the JIFRESSE institute, closely associated with JPL. Investigator on NSF EaSM2 proposal in the area of Regional Climate Modeling and Evaluation and the Coordinated Regional Downscaling Experiment. Collaborated closely with Dr. Duane Waliser, JIFRESSE Fellow, and Dr. Jinwon Kim, expert in the area of regional climate modeling. Will advise Ph.D. student at UCLA in Computer Science on the project.

## Course Development

**Industry**

1. **DSCI 550 / INF 550: Data Science at Scale - University of Southern California**
   `http://irds.usc.edu/classes/dsci550_2024a/`
   `http://irds.usc.edu/classes/dsci550_2023a/`
   `http://irds.usc.edu/classes/inf550_2020a/`
   University of Southern California Computer Science Department
   Spring 2020 Semester
   Instructors: C. Mattmann
   Class Size: approximately 30 to 40 onsite and 10 DEN students.
   Applied Data Science Course, taught via DEN and on campus in Spring 2020. Course focused on Apache Tika, file type detection, parsing and extraction, metadata, language identification, and named entity recognition.
2. **CSCI 599: Content Detection and Analysis for BigData - University of Southern California**
   `http://irds.usc.edu/classes/cs599_2018a/`
   `http://sunset.usc.edu/classes/cs599_2016/`
   University of Southern California Computer Science Department
   Spring 2018 Semester
   Spring 2016 Semester
   Instructors: C. Mattmann
   Class Size: approximately 60 to 90 onsite students.
   Developed new CSCI 599: Content Detection and Analysis for BigData course. Course focused on Apache Tika, file type detection, parsing and extraction, metadata, language identification, and named entity recognition.
3. **Data Science Workshop - UC Riverside**
   `https://astro.ucr.edu/workshop-on-big-data/`

UC Riverside Data Science
March 2, 2016
Instructors: C. Mattmann
Class Size: approximately 30 onsite participants
Provided Course on Content Detection and Analysis for Big Data to UCR students part of the FIELDS program and joint work with NASA JPL, Caltech and UCR and UCI.

4. **JPL-Caltech Virtual Summer School in Big Data Analytics**
`http://bigdata.astro.caltech.edu/`
JPL/Caltech Data Science
August 2014 - September 2014
Instructors: A. Braverman, D. Crichton, S. Davidoff, S. George Djorgovski, C. Donalek, R. Doyle, T. Fuchs, M. Graham, A. Mahabal, C. Mattmann, D. R. Thompson, M. Turmon
Class Size: 30 Virtual Participants via Coursera
Virtual Recording Big Data and Data Science Summer School jointly organized with JPL and Caltech. Helped to collaboratively develop meeting schedule and planning for the summer school and developed two course modules:
    - Big Data Architectures - Fundamentals - a three part module covering software architecture, and Big Data, architectural fundamentals, components, connectors, configurations, styles, patterns, modeling, visualization, and architectural recovery and case studies.
    - Content Detection and Analysis for Big Data - a three part module covering MIME identification, file parsing, text and information retrieval, language identification, machine translation, and case studies involving Apache Tika.
5. **Using Satellite Observations to Advance Climate Models - A Regional Climate Model Evaluation System**
JPL Center for Climate Sciences
August 2012 (1.5 hour short course)
Instructors: C. Mattmann
Class Size: ∼30 students
Practical session demonstrating architecture, tools, and computer/data science aspects of comparing remote sensing data to climate model outputs using the Regional Climate Model Evaluation System (RCMES) tool and efforts emerging from JPL's climate software architecture work.
`http://climatesciences.jpl.nasa.gov/page/26`
`http://goo.gl/WqolZBc`
6. **NASA ARSET Snow Product Training Western US Water Management**
NASA Applied Sciences Remote Sensing Training (ARSET) Program
January 2013 (5 week course)
Instructors: T. Painter and C. Mattmann
Program Managers: Ana Prados and Amita Mehta
Class Size: ∼30 students
Training in improved NASA snow products pioneered by Dr. Tom Painter for the Western US, Alaska and Hindu Kush Himalaya region. Training in the basics of remote sensing, satellite orbits, basics of snow spectroscopy, and data management software and tools for snow data. Training in improved snow covered area and grain size measurements, and dust radiative forcing of black carbon/impurties from Snow products. Training in JPL's Snow Server and Science Computing Facility for the management of NASA snow data and in open source methodologies and techniques and tools.
7. **PCS Technology Pilot Course**
NASA Jet Propulsion Laboratory Professional Development Program
January 2010
Instructors: C. Mattmann and D. Freeborn
Class Size: ∼10 students

Basic training in JPL's Object Oriented Data Technology (OODT) Process Control System (PCS) Software and its applicability to science data processing systems. Topics covered include the PCS heritage, PCS architecture and 2 hands-on code development exercises in the afternoon involving RSS, Podcasting, iTunes, and file and workflow management.

MEDIA

See https://s.apache.org/rea46 for my last 100 appearances in the past year.

**Articles**

1. S. Downing. Live event: Sen. Roger Holland and NASA scientist Chris Mattmann on future of space and Alaska. *Must Read Alaska*. Mar 11, 2021. https://mustreadalaska.com/live-event-sen-roger-holland-and-nasa-scientist-chris-mattma
2. AIT News Desk. Seven Bridges Announces Strategic Advisory Board Appointments. *AI Technology Insights*. Mar 4, 2021. ttps://aithority.com/technology/life-sciences/seven-bridges-announces-strategic-advisor
3. Business Wire. Slingshot Aerospace Announces Board of Advisors. *Business Wire*, Mar 3, 2021. https://www.businesswire.com/news/home/20210303005005/en/Slingshot-Aerospace-Announces-
4. SE Cupp. My 2021: New Year's resolutions from Josh Gad, Andrew Yang and others. *NY Daily News*, Dec 29, 2020. https://www.nydailynews.com/opinion/ny-oped-new-years-resolutions-20201229-kpsqww2g2bbw html
5. J. Cawood. Demonstrators Return To Los Angeles County Public Health Director's Home To Protest COVID-19 Restrictions.*Daily Wire*. December 5, 2020. https://www.dailywire.com/news/demonstrators-return-to-los-angeles-county-public-health
6. Greg P. NO WAY! New report says Covid-19 likely in the U.S. in December 2019 (Before China ever acknowledged it publicly). *Twitchy*. December 1, 2020. https://twitchy.com/gregp-3534/2020/12/01/no-way-new-report-says-covid-19-likely-in-the
7. A. Ghoshal. Here is how NASA's jet propulsion lab uses data analytics and artificial intelligence. *ET Edge*. November 28, 2020. https://etinsights.et-edge.com/how-nasa-uses-data-analytics-artificial-intelligence/
8. S. Hodge. Scratching the Itch. *Tech For Good*, https://techforgood.digitalbulletin.com/mag/techforgood-august-2020?p=50|
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2. C. Mattmann. Review of: Geolocation in iOS: Mobile Positioning and Mapping on iPhone and iPad. *ACM Computing Reviews*. Review #: CR146916, March 2013.
3. C. Mattmann. Review of: Patterns of Data Modeling. *ACM Computing Reviews*. Review #: 130772, February 2012.
4. C. Mattmann. Review of: Run-time models for self-managing systems and applications. *ACM Computing Reviews*. Review #: CR123344, November 2011.
5. C. Mattmann. Review of: Rigi-An environment for software reverse engineering, exploration, visualization, and redocumentation. *ACM Computing Reviews*, Review #: CR138524, October 2010.
6. C. Mattmann. Review of: Domain-Specific Languages in a Customs Information System. *ACM Computing Reviews*, Review #: CR138361, September 2010.
7. C. Mattmann. Review of: Journal on Data Semantics XII. *ACM Computing Reviews*, Review #: CR137473, November 2009.
8. C. Mattmann. Review of: Pro Hadoop. *ACM Computing Reviews*, Review #: CR137448, November 2009.
9. C. Mattmann. Review of: Database and information-retrieval methods for knowledge discovery. *ACM Computing Reviews*, Review #: CR136803, May 2009.
10. C. Mattmann. Review of: Better scripts, better games. *ACM Computing Reviews*, Review #: CR136725, April 2009.
11. C. Mattmann. Review of: Software Engineering and Formal Methods. *ACM Computing Reviews*, Review #: CR135087, October 2008.
12. C. Mattmann. Review of: Constraint logic programming using ECLiPSe. *ACM Computing Reviews*, Review #: CR135844, July 2008.
13. C. Mattmann. Review of: Composition inference for UML class diagrams. *ACM Computing Reviews*, Review #: CR135556, May 2008.
14. C. Mattmann. Review of: MapReduce: simplified data processing on large clusters. *ACM Computing Reviews*, Review #: CR135329, March 2008.
15. C. Mattmann. Review of: Smart card applications: Design models for using and programming smart cards. *ACM Computing Reviews*, Review #: CR135205, February 2008.
16. C. Mattmann. Review of: Quality, productivity and economic benefits of software reuse: a review of industrial studies. *ACM Computing Reviews*, Review #: CR135087, January 2008.

**Technical Articles**

1. C. Mattmann. The Next Steps for the Digital Babel Fish. *Lingo24 Blog Post*. August 1, 2014. `http://blog.lingo24.com/next-steps-digital-babel-fish/`
2. L. McGibbney, C. Mattmann, K. Whitehall, A. Burgess. What's open source got to do with Earth science? NASA explains. *Opensource.com*. June 17, 2014. `http://opensource.com/life/14/6/NASA-Earth-science-open-source`

3. C. Mattmann. Apache OODT – Student: Rajith Siriwardana. Google Summer of Code Veteran Orgs: Apache Software Foundation. Google Open Source Blog. October 4, 2013. http://google-opensource.blogspot.com/2013/10/google-summer-of-code-veteran-orgs.html
4. C. Mattmann. Apache does science. *SD Times*, February 12, 2013. http://www.sdtimes.com/content/article.aspx?ArticleID=39397
5. C. Mattmann, E. Law and A. Hart. Special Feature: Apache in Space! Introduction to the ApacheCon NA 2011 - Apache in Space Track. *OStatic*, Published online: http://ostatic.com/blog/guest-post-apache-in-space, Friday November 4, 2011.
6. C. Mattmann and O. Tikhonov. Understanding Information Content with Apache Tika. *IBM DeveloperWorks*, Published online: http://www.ibm.com/developerworks/opensource/tutorials/os-apache-tika/authors.html, June 15, 2010.

**Patents**

1. A. Mishra, S. Cheng, A. Didier, C. Mattmann, H. Venkaratam, G. Lee, W. Burke, V. Lall. *Converting Unstructured Technical reports to Structured Technical Reports using Machine Learning*. United States Patent Application 20200226325, Application Number: 16/740066, Publication Date: 07/16/2020 http://www.freepatentsonline.com/y2020/0226325.html

INTERNATIONAL STANDARDS

"Information Architecture for Space Data Systems" Consultative Committee on Space Data Systems (CCSDS) Information Architecture Working Group (IA-WG) Currently *Draft Green Book Status* http://www.ccsds.org/docu/dscgi/ds.py/Get/File-1609/CCSDSInfoArch-new.pdf

RESEARCH GRANTS

**Current** None

**Completed**

1. DARPA Assured MicroPatching
   "Support to the Assured Micropatching Program (AMP)"
   Amount: $1.2M
   Duration: 11/01/2020 - 02/31/2024
   PI(s):
   Chris A. Mattmann, NASA JPL
2. DARPA Critical Mass
   "Support to the Critical Mass Program'
   Amount: $1.0M
   Duration: 01/01/2022 - 07/31/2023
   PI(s):
   Chris A. Mattmann, NASA JPL
3. DARPA SafeDocs (TA3)
   "Automatic Production of Digital Evaluation Corpora using Apache Tika"
   Amount: $2.6M
   Duration: 11/01/2018 - 07/31/2022
   PI(s):
   Chris A. Mattmann, NASA JPL
4. DARPA Learning with Less Labels (Government Team)
   "JPL's Support for the Government Evaluation Capabilities on DARPA Learning with Less Labels (LwLL)"
   Amount: $4.4M
   Duration: 08/01/2018 - 07/31/2022

PI(s):
Chris A. Mattmann, NASA JPL

5. National Science Foundation: Software Infrastructure for Sustained Innovation (SSE, SSI, S2I2) Software Elements, Frameworks and Institute Conceptualizations
"Geospatial Software Institute (GSI) "
Duration: 10/01/2017 - 09/30/2018
Amount: 500K
PI(s): Shaowen Wang, University of Illinois
Co-PI(s):
Daniel S. Katz, University of Illinois
Donna J. Cox, University of Illinois
Paul Morin, Polar Geospatial Center (PGC)
Margaret A. Palmer, University of Maryland
Senior Personnel:
Chris A. Mattmann, University of Southern California
`https://www.nsf.gov/awardsearch/showAward?AWD_ID=1743184`

6. National Science Foundation: EarthCube: Developing a Community-Driven Data and Knowledge Environment for the Geosciences
"Earthcube Building Blocks: Collaborative Proposal: Polar Data Insights and Search Analytics for the Deep and Scientific Web"
Duration: 09/01/2016 - 08/31/2019
Amount: 939K
PI(s): Chris A. Mattmann, University of Southern California
Co-PI(s):
Siri Jodha Khalsa, NSIDC
Ruth Duerr, Ronin Institute
`https://www.nsf.gov/awardsearch/showAward?AWD_ID=1639753`

7. National Science Foundation: eXtreme Science and Engineering and Discovery Environments (XSEDE) Resource Allocation Request: TG-CIE170006 and CIE160008
"Open Source Information Retrieval and Data Science - JPL/USC Group"
Duration: 01/01/2016 - 08/15/2017
Amount: 20,000 node hours & 10TB storage on Wrangler
PI(s): Chris A. Mattmann, University of Southern California

8. NASA Computational Modeling Algorithms and CyberInfrastructure (CMAC) A.40
"Climate Data Analytics Workflow Management"
Amount: $601K
Duration: 07/01/2015 - 06/30/2018
PI: Jia Zhang, CMU
co-I(s):
Seungwon Lee, JPL
Chris Mattmann, JPL
Collaborator(s): Jonathan Jiang, JPL
Zhangfan Xing, JPL

9. DARPA BAA 14-21 Memex: TA1 (Domain Specific Indexing) and TA2 (Domain Specific Search)
"An Exploratory Interface for a Focused Search with Multimedia"
Amount: $5.7M (JPL portion: $2.4M)
Duration: 08/01/2014 - 07/31/2017
PI(s):
Chris A. Mattmann, NASA JPL
Site PI(s) / SubContractors:
Jeff Baumes, Kitware

Andy Terrel, Continuum Analytics
Senior Personnel:
Paul Ramirez, NASA JPL
Peter Wang, Continuum Analytics
Travis Oliphant, Continuum Analytics
Sangmin Oh, Kitware
Aashish Chaudhary, Kitware
Hanspeter Pfister, Harvard

10. DARPA BAA 14-21 Memex: TA1 (Domain Specific Indexing) and TA2 (Domain Specific Search)
"DIG: Domain Specific Insight Graphs"
Amount: $10.1M (JPL portion: $1M)
Duration: 08/01/2014 - 07/31/2017
PI(s):
Pedro Szekely, USC/ISI
Craig Knoblock, USC/ISI
Daniel Marcu, USC/ISI
Prem Natarajan, USC/ISI
Kevin Knight, USC/ISI
Andrew Philpot, USC/ISI
Steven Minton, InferLink
Shih-Fu, Chang, Columbia University
Todd Hughes, NextCentury
Chris Mattmann, NASA JPL

11. Defense Research Projects Agency: XDATA: DARPA-BAA-12-38
Technical Area 3 (TA3): Research software integration
"A Scalable, Extensible, Open Source Platform for Data Processing, Archival and Dissemination"
Duration: November 2012 - March 2017
Amount: 12M (JPL portion: 4.7M)
PI(s):
Samuel Park, MDA Information Systems
Chris A. Mattmann, Jet Propulsion Laboratory
Adam Estrada, MDA Information Systems
Yolanda Gil, USC/ISI Information Sciences Institute

12. NASA Suomi National Polar-orbiting Partnership (NPP) Science Team and Science Investigator-led Processing Systems for Earth System Data Records From Suomi NPP
"Development, Operation and Management of the Sounder SIPS for Processing Suomi NPP Sounder Data"
Amount: $10.38M
Duration: 06/01/2014 - 05/31/2019
PI: Steven Friedman, JPL
co-I(s):
Eric Fetzer, JPL
Evan Manning, JPL
Ruth Monarrez, JPL
Chris Mattmann, JPL
Bruce Volmer, NASA GSFC
Collaborator(s):
Hartmut Aumann, JPL
Evan Fishbein, JPL
Sung-Yung Lee, JPL
Thomas Pagano, JPL

Paul Ramirez, JPL
Joao Teixeira, JPL

13. NASA Advanced Information Systems Technology (AIST) A.41
"SciSpark: Highly Interactive and Scalable Model Evaluation and Climate Metrics for Scientific Data and Analysis"
Amount: $1.26M
Duration: 03/01/2015 - 02/28/2017
PI: Chris A. Mattmann JPL
co-I(s):
Brian Wilson, JPL
Huikyo Lee, JPL
Paul Loikith, JPL
Lewis John McGibbney, JPL
Jinwon Kim, UCLA JIFRESSE
Yolanda Gil, USC/ISI
Collaborator(s):
Duane Waliser, JPL
Kim Whitehall, Howard University
Eric Fetzer, JPL
`http://1.usa.gov/1wvofsP`

14. National Climate Assessment - NASA Centers Call for Proposals: 3 year extension request
"Enabling Regional Climate Model Evaluation: A Critical Use of Observations for Establishing Core NCA Capabilities"
Duration: October 2014 - September 2017
Amount: $1.2M
PI: Duane Waliser, Jet Propulsion Laboratory
CO-I(s): Chris A. Mattmann, Jet Propulsion Laboratory & USC
Kenneth Kunkel, NCDC and NC State

15. National Aeronautics and Space Administration - Earth Science Data Information System Project
"Support for the NASA Earth Science Data Systems Open Source and Geospatial Working Groups"
Duration: April 2013 - March 2016
Amount: 1.05M
PI(s): Chris Mattmann

16. National Science Foundation: EarthCube: Developing a Community-Driven Data and Knowledge Environment for the Geosciences
"EarthCube Building Blocks: Collaborative Proposal: GeoSoft: Collaborative Open Source Software Sharing for Geosciences"
Duration: 10/01/2014 - 09/30/2016
Amount: $1M
PI(s): Yolanda Gil, University of Southern California Information Sciences Institute
Co-PI(s):
Chris A. Mattmann, USC
Christopher J. Duffy, Penn State
Scott D Peckham, University of Colorado
Erin M Robinson, ESIP Foundation
`http://www.nsf.gov/awardsearch/showAward?AWD_ID=1440323`

17. National Science Foundation: Major Research Instrumentation (MRI)
"NASA/Jet Propulsion Laboratory Support for MRI: Development of Radio Array of Portable Interferometric Detectors (RAPID)"
Amount: 246K (JPL portion of larger 2.3M grant led by MIT Haystack Observatory)

Duration: August 2013 - July 2016
PI(s): Chris A. Mattmann, NASA JPL
Broader Team:
PI(s): Colin Lonsdale, MIT Haystack Observatory
co-PI(s): Frank Lind, MIT Haystack Observatory
http://www.nsf.gov/awardsearch/showAward?AWD_ID=1343583
http://www.nsf.gov/awardsearch/showAward?AWD_ID=1229036

18. National Science Foundation: Office of Polar Programs: Office of Cyber Infrastructure (Polar CyberInfrastructure)
"An open source framework for metadata exploration and discovery of Polar Data"
Duration: 8/16/2013 - 7/31/2015
Amount: 300K
PI(s): Chris A. Mattmann, USC
http://www.nsf.gov/awardsearch/showAward?AWD_ID=1348450

19. National Aeronautics and Space Administration: A.36 Advancing Collaborative Connections for Earth System Science (ACCESS)
"Federated Giovanni for Multi-Sensor Data Exploration"
Duration: Jan. 2014 - Dec. 2015
Amount: 600K
PI(s): Christopher Lynnes, NASA GSFC
Co-I(s):
Chris Mattmann, NASA JPL
Charles Thompson, NASA JPL
James G. Acker, NASA GSFC
Bryan A. Franz, NASA GSFC Ocean Biology Processing Group
Tom Sohre, LPDAAC/USGS
Eurico D'Sa, Louisiana State University

20. NASA A.34 Earth Science Applications: Water Resources: (Co-Investigator)
"Integration of precision NASA snow products with the operations of the Colorado Basin River Forecast Center to improve decision making under drought conditions"
Duration: February 2012 - January 2016
Amount: 1.2M
PI: Thomas Painter, Jet Propulsion Laboratory
CO-I(s): Chris A. Mattmann, Jet Propulsion Laboratory
Kevin Werner, NOAA
Andy Wood, NOAA

21. National Science Foundation: Polar CyberInfrastructure NSF 14-1
"A DataViz Hackathon for Polar CyberInfrastructure"
Duration: 07/01/2014 - 06/30/2015
Amount: $50K
PI(s): Chris A. Mattmann, USC
Senior Personnel:
Ann Burgess, USC
Collaborators:
Christopher Goranson, Parsons: The New School
http://www.nsf.gov/awardsearch/showAward?AWD_ID=1445624

22. National Climate Assessment - NASA Centers Call for Proposals: 1 year extension request
"Snow and Ice Climatology of the Western United States from MODIS (Extension): Climatology of Forest and Canopy Closure in Snow Covered Mountains of the Western US:bark beetles and wildfires"
Duration: October 2013 - September 2014
Amount: 200K

PI: Thomas Painter, Jet Propulsion Laboratory
CO-I(s): Chris A. Mattmann, Jet Propulsion Laboratory & USC
David Schimel, JPL

23. Jet Propulsion Laboratory - Research and Technology (R&TD) Development Fund: (Principal Investigator)
"9x: BigData Initiative: Archiving, Processing and Dissemination for the Big Data Era"
Duration: Sept 2012 - Sept 2014
Amount: 720K
PI(s): Chris Mattmann, Jet Propulsion Laboratory
Co-I(s):
Shakeh Khudikyan, Jet Propulsion Laboratory
Paul M. Ramirez, Jet Propulsion Laboratory
Michael Starch, Jet Propulsion Laboratory
Rishi Verma, Jet Propulsion Laboratory
Andrew F. Hart, Jet Propulsion Laboratory
Luca Cinquini, Jet Propulsion Laboratory
Dayton Jones, Jet Propulsion Laboratory
Joe Lazio, Jet Propulsion Laboratory

24. NASA Earth Science Technology Office (ESTO) Quick Response Study (QRS) Call 2014
"Improving Interactivity and Interoperability in the Regional Climate Model Evaluation System (RCMES)"
Amount: $250K
Duration: 04/01/2014 - 09/31/2014
PI: Chris A. Mattmann

25. National Science Foundation: EarthCube: Developing a Community-Driven Data and Knowledge Environment for the Geosciences
"EarthCube Building Blocks: Software Stewardship for the Geosciences"
Duration: 7/15/2013 - 6/30/2015
Amount: 342K
PI(s): Yolanda Gil, University of Southern California Information Sciences Institute
Co-PI(s):
Chris A. Mattmann, USC
Christopher J. Duffy, Penn State
Scott D Peckham, University of Colorado
Erin M Robinson, ESIP Foundation
`http://www.nsf.gov/awardsearch/showAward?AWD_ID=1343800`

26. National Climate Assessment - NASA Centers Call for Proposals: 1 year extension request
"Enabling Regional Climate Model Evaluation: A Critical Use of Observations for Establishing Core NCA Capabilities"
Duration: October 2013 - September 2014
Amount: 400K
PI: Duane Waliser, Jet Propulsion Laboratory
CO-I(s): Chris A. Mattmann, Jet Propulsion Laboratory & USC
Jinwon Kim, UCLA
Linda Mearns, NCAR

27. NASA & Jet Propulsion Laboratory - President and Director's Fund: (Co-Investigator)
"A Roadmap to Probing Cosmic Dawn at the Owens Valley Radio Observatory"
Duration: FY2013
Amount: 343K
PI(s): Joseph Lazio, Jet Propulsion Laboratory
Gregg Hallinan, Caltech
Co-I(s):

Marin Anderson, Caltech
Stephen Bourke, Caltech
Larry D'Addario, Jet Propulsion Laboratory
Michael Eastwood, Caltech
Jake Hartman, Jet Propulsion Laboratory
David Hawkins, Caltech
Shri Kulkarni, Caltech
Walid Majid, Jet Propulsion Laboratory
Chris Mattmann, Jet Propulsion Laboratory
Melissa Soriano, Jet Propulsion Laboratory
Brad Wiitala, Caltech
David Woody, Caltech

28. National Science Foundation/G8 International Collaborative
"ExArch: Climate analytics on distributed exascale data archives"
Duration: 3/1/2011-2/29/2016
Amount: 295K
PI(s): Duane Waliser, UCLA JIFRESSE
Co-PI(s):
Jinwon Kim, UCLA JIFRESSE
Chris A. Mattmann, UCLA JIFRESSE
http://www.nsf.gov/awardsearch/showAward?AWD_ID=1125798

29. NASA A.40 Computational Modeling Algorithms and Cyberinfrastructure (Principal Investigator)
"Next Generation Cyberinfrastructure to Support Comparison of Satellite Observations with Climate Models"
Duration: Sept 2012-August 2014
Amount: 648.2K
PI: Chris A. Mattmann, Jet Propulsion Laboratory
CO-I(s):
Luca Cinquini, Jet Propulsion Laboratory
Pamela Rinsland, NASA Langley Research Center
Dean Williams, LLNL
Chris Lynnes, NASA Goddard Space Flight Center
Collaborator(s):
Dan Crichton, Jet Propulsion Laboratory
Amy Braverman, Jet Propulsion Laboratory
Thomas Huang, Jet Propulsion Laboratory
Duane Waliser, Jet Propulsion Laboratory
http://www.hec.nasa.gov/user/funding/CMAC11_Selections.pdf
http://goo.gl/EYCCx

30. National Science Foundation: Software Institutes - Software Infrastructure for Sustained Innovation (S2I2)
"Conceptualizing an Institute for Sustainable Earth and Environmental Software (ISEES)"
Amount: 582.7K
PI(s): Matthew B. Jones, UCSB
Co-PI(s): Peter Fox, RPI
Carol B. Meyer, ESIP
William K Michener, Long Term Ecological Research Network
Mark P Schildhauer, UCSB
Chris Mattmann, USC
http://www.nsf.gov/awardsearch/showAward?AWD_ID=1216894

31. NASA Applied Sciences - ARSET (Applied Remote SEnsing Training)
"NASA Applied Remote Sensing Training Program"

Duration: April 2012 - March 2013
Amount: 80K
PI: Ana Prados, NASA GSFC & University of Maryland
Co-Is:
Tom Painter, NASA JPL
Chris A. Mattmann, NASA JPL
Amita Mehta, NASA GSFC & University of Maryland
Cindy Schmidt, NASA ARC

32. National Aeronautics and Space Administration: ROSES AIST
"A Regional Climate Model Evaluation System"
Duration: 06/2012-05/2013
Role: Principal Investigator
Amount: 420K
PI(s): Chris A. Mattmann, JPL
Co-I(s):
Dr. Duane Waliser, JPL
Dr. Jinwon Kim, UCLA
Dr. Yolanda Gil, USC/ISI
Mr. Dan Crichton, JPL
Dr. Luca Cinquini, JPL
Mr. Hook Hua, JPL
Collaborator:(s)
Dr. Tom Painter, JPL

33. U.S. Department of the Interior - Bureau of Reclamation
"Airborne Snow Observatory Western Energy Balance of Snow An Integrated Observatory"
Duration: Summer 2013 - Summer 2015
Amount: 1.2M
PI: Tom Painter, Jet Propulsion Laboratory
Co-I(s):
Richard Atwater, Independent Consultant
Joe Boardman, AIG
Jeff Deems, NSIDC
Jennifer Dooley, Jet Propulsion Laboratory
Chris A. Mattmann, Jet Propulsion Laboratory
Bruce McGurk, McGurk Hydrological

34. National Aeronautics and Space Administration: ROSES AIST
"Advanced Rapid Imaging & Analysis for Monitoring Hazards (ARIA-MH)"
Duration: 4/2012-03/2016
Role: Co-Investigator
Amount: 1.5M
PI(s): Hook Hua, JPL
Co-I(s):
Dr. Chris A. Mattmann, JPL
Dr. Susan Owen, JPL
Dr. Sang-Ho Yun, JPL
Dr. Angelyn Moore, JPL
Dr. Paul Lundgren, JPL
Dr. Chris Mattmann, JPL
Ms. Jennifer Cruz, JPL
Dr. Mark Simons, Caltech

35. National Aeronautics and Space Administration: ROSES ACCESS
"Collaborative Climate Model and Observational Data Services"
Duration: FY2012-FY2013

Role: Co-Investigator
Amount: 789.4K
PI(s): Hook Hua, JPL
Co-I(s):
Eric Fetzer , JPL
Brian Kahn, JPL
Chris Mattmann, JPL
Brian Wilson, JPL
Sun Wong, JPL
Michael Bosilovich, GSFC

36. Climate and Development Knowledge Network (CDKN) collaboration between knowledge brokers: (Co-Investigator)
"Linking stakeholders with integrated climate change data"
Duration: FY2012
Amount: 130.7K
PI: Bruce Hewitson, University of Cape Town
CO-I(s):
Chris A. Mattmann, Jet Propulsion Laboratory & USC
Roger Street, Oxford University

37. National Climate Assessment - NASA Centers Call for Proposals: (Co-Investigator)
"Snow and Ice Climatology of the Western United States from MODIS"
Duration: FY11-FY13
Amount: 427.5K
PI: Thomas Painter, Jet Propulsion Laboratory
CO-I(s): Chris A. Mattmann, Jet Propulsion Laboratory & USC

38. National Climate Assessment - NASA Centers Call for Proposals: (Co-Investigator)
"Enabling Regional Climate Model Evaluation: A Critical Use of Observations for Establishing Core NCA Capabilities"
Amount: 866.7K
PI: Duane Waliser, Jet Propulsion Laboratory
CO-I(s): Chris A. Mattmann, Jet Propulsion Laboratory & USC
Jinwon Kim, UCLA
Linda Mearns, NCAR

39. National Aeronautics and Space Administration - Earth Science Data Information System Project: (Principal Investigator)
"Support for the NASA Earth Science Data Systems Software Reuse Working Group"
Duration: July 2011 - January 2013
Amount: 596K
PI(s): Chris Mattmann

40. Jet Propulsion Laboratory - Research and Technology (R&TD) Development Fund: (Principal Investigator)
"Radio Array Initiative: Scalable Data Archiving and Mining"
Duration: FY2011-FY2013
Amount: 170K
PI(s): Chris Mattmann, Jet Propulsion Laboratory
Co-I(s): Andrew Hart, Jet Propulsion Laboratory
Dayton Jones, Jet Propulsion Laboratory

41. Jet Propulsion Laboratory - Strategic Investments for Earth Science : (Principal Investigator)
"Regional Climate Modeling Evaluation System"
Duration: FY2011
Amount: 120K
PI(s): Chris Mattmann, Jet Propulsion Laboratory

42. National Aeronautics and Space Administration - American Recovery and Reinvestment Act : (Principal Investigator)
"IT Modeling Database: Water Resource Management"
Duration: FY2010
Amount: 65K
PI(s): Chris Mattmann, Jet Propulsion Laboratory

43. Jet Propulsion Laboratory - Software Royalty Reinvestment Fund (SRRF)
"Packaging and Disseminating the Climate Data eXchange (CDX) Software for Climate Model Diagnostics (CDX)"
Duration: FY2010-11
Amount: 53K
PI(s): Chris Mattmann, Jet Propulsion Laboratory
Co-I(s): Daniel J. Crichton, Jet Propulsion Laboratory
Amy Braverman, Jet Propulsion Laboratory

44. National Aeronautics and Space Administration: ROSES ACCESS
"Improving Discovery for Coastal Marine Web Services and Resources"
Duration: FY2010-FY2012
Role: Co-Investigator
Amount: 583K
PI(s): Ed Armstrong, JPL
Co-I(s):
Frank O'Brien, SSA
Dr. Dale Kiefer, USC, SSA
Chris A. Mattmann, JPL

45. National Institutes of Health - Recovery Act Limited Competition: NIH Challenge Grants in Health and Science Research (RC1)
"Advanced Computational Framework for Decision Support in Critically Ill Children"
Duration: FY2010-FY2012
Amount: 1000K
PI(s): Randall Wetzel, CHLA
Co-I(s):
Daniel J. Crichton, JPL
Chris A. Mattmann, JPL
Amy Braverman, JPL

46. Jet Propulsion Laboratory - Research and Technology (R&TD) Development Fund: (Co-Investigator)
"The Climate Data Exchange: A Distributed Science Analysis Environment for Climate Research"
Duration: FY2009-FY2011
Amount: 1300K
PI(s): Amy Braverman, Jet Propulsion Laboratory
Co-I(s): Daniel J. Crichton, Jet Propulsion Laboratory
Chris Mattmann, Jet Propulsion Laboratory
Robert Raskin, Jet Propulsion Laboratory
David Woollard, Jet Propulsion Laboratory

47. National Aeronautics and Space Administration: IPP Seed Fund
"Facilitating Climate Modeling Research By Integrating NASA and the Earth System Grid"
Duration: FY2009-FY2010
Role: Collaborator
Amount: 250K
PI(s): Dan Crichton, JPL
Dean Williams, LLNL

Collaborator(s):
Yi Chao, JPL
Robert Raskin, JPL
Amy Braverman, JPL
Chris A. Mattmann, JPL

48. National Aeronautics and Space Administration: ROSES ACCESS
"Virtual Oceanographic Data Center"
Duration: FY2008-FY2009
Role: Co-Investigator
Amount: 597K
PI(s): Robert Raskin, JPL
Co-I(s):
Chris A. Mattmann, JPL
Jorge Vasquez, JPL
Edward Armstrong, JPL

49. National Institutes of Health: Task Plan Renewal
"EDRN Cancer Research Informatics Platform"
Duration: FY2005-2008
Role: Key Staff
Amount: 4000K
PI(s): Dan Crichton, Jet Propulsion Laboratory
Status: Funded

50. Jet Propulsion Laboratory - Research and Technology (R&TD) Development Fund: (Co-Investigator)
"Library of Reusable CMSV Tools"
Duration: FY2004-FY2006
Amount: 400K
PI(s): Mark Kordon, Jet Propulsion Laboratory
Co-I(s): Daniel J. Crichton, Jet Propulsion Laboratory
Chris Mattmann, Jet Propulsion Laboratory
Tom Boyce, Jet Propulsion Laboratory
Jayne Dutra, Jet Propulsion Laboratory
Norm Lamarra, Jet Propulsion Laboratory
Young Lee, Jet Propulsion Laboratory
Julia Dunphy, Jet Propulsion Laboratory
Ted Specht, Jet Propulsion Laboratory
Dana Freeborn, Jet Propulsion Laboratory

## Formal Presentations

1. *TensorFlow and Machine Learning from the Trenches - the Innovation Experience Center at the Jet Propulsion Laboratory.* C. Mattmann. TensorFlow Dev Summit 2020. March 11, 2020, Google Campus LiveStream.
`https://www.tensorflow.org/dev-summit/agenda`

2. *Artificial Intelligence and Analytics in JPL's Innovation Experience Center.* 2020 Ground Systems Architecture Workshop (GSAW) Session 12A Advancing Space Exploration at the Jet Propulsion Laboratory (JPL).
`https://gsaw.org/`

3. *Deep Facial Recognition using TensorFlow.* C. Mattmann. 2019 IEEE/ACM Third Workshop on Deep Learning on Supercomputers (DLonHSC19) at the International Conference for High Performance Computing, Networking, Storage, and Analysis (SC19), pp. 45-51, November 17-22, 2019, Denver, CO, USA.
`https://dlonsc19.github.io/`

4. *Towards Automatic and Explainable Data Science for NASA*. C. Mattmann. 48th Annual IEEE Applied Imagery Pattern Recognition (AIPR) annual workshops 2019: Cognition, Collaboration, and Cloud. Washington, D.C., October 15-17, 2019.
`https://www.aipr-workshop.org/`
5. *Strategies to Collaborate and Communicate the Value of Data: Data Feud Gameshow*. C. Mattmann, N. Janssen Walls, M. Wang. Evanta Chief Data Officer Summit, Burbank, CA, June 6, 2019.
`https://www.evanta.com/cdo/summits/southern-california#agenda#23021`
6. *Session 14: Panel Discussion: Creating Smarter Ground Systems*, C. Mattmann, K. Rengarajan, M. Wheaton, T. Deaver, J. Deckert, A. Donati, C. Knoblock, J. Moirin. Ground Systems Architecture Workshop, The Aerospace Corporation, El Segundo, CA, February 28, 2019.
`http://gsaw.org/past-proceedings/2019-2/`
7. *Explore JPL Seminar: Caltech*. C. Mattmann. Presented at Caltech / JPL Education Office Seminar. November 7, 2016.
`http://www.sustainability.caltech.edu/events/52420`
8. *Multimedia Metadata-based Forensics in Human Trafficking Web Data*. C. Mattmann. Presented at the Workshop on Search and Exploration of X-Rated Information (SEXI) - 9th ACM International Conference on Web Search and Data Mining, San Francisco, California, USA. February 22, 2016.
9. *NSF GeoSoft: Architecture*. C. Mattmann. Presented at the NSF EarthCube Architecture Workshop, La Jolla, CA, June 19, 2015.
`http://earthcube.org/workspace/architecture-wg/earthcube-architecture-workshop`
10. *Revisiting the Anatomy and Physiology of the Grid*. C. Mattmann. Presented at the 1st Workshop on The Science of Cyberinfrastructure: Research, Experience, Applications and Models (SCREAM '15) co-located with the ACM Symposium on High-Performance Parallel and Distributed Computing. Portland, OR, June 16, 2015.
`https://sites.google.com/site/scream15workshop/home`
11. *Spark at NASA/JPL*. C. Mattmann. Presented at the Spark Summit (Keynote) 2015, San Francisco, CA, Monday, June 15, 2015.
`https://www.youtube.com/watch?v=xPD4lPypSXQ`
`https://spark-summit.org/2015/events/spark-at-nasa-jpl/`
12. *Introducing Apache Tika*. C. Mattmann. Presented at the Pasadena Big Data User Group, Pasadena, CA, April 29, 2015.
`http://www.meetup.com/Pasadena-Big-Data-Users-Group/events/221371125`
13. *An Open Source Big Data Ecosystem*. C. Mattmann. Part of a Tutorial on Big Data Considerations for Ground System Environments at the 2015 Ground Systems Architecture Workshop (GSAW), Los Angeles, CA, Monday, March 2, 2015.
`http://gsaw.org/agenda/tutorials/tutorial-e/`
14. *An Open Source Big Data Ecosystem*. C. Mattmann. Presented at the 5th Los Angeles Geospatial Summit, Japanese American Museum, Los Angeles, CA February 27, 2015.
`http://spatial.usc.edu/index.php/events/fifth-annual-los-angeles-geospatial-summit/`
15. *SciSpark: Highly Interactive and Scalable Regional Climate Model Evaluation*. C. Mattmann. Presented at the NASA Booth at the 2014 Fall American Geophysical Union (AGU) Meeting, San Francisco, CA, December 16, 2014.
16. *A Research Agenda and Vision for Data Science*. C. Mattmann. Presented at the American Geophysical Union (AGU) Fall 2014 Meeting, NG13A: Geophysical, Astrophysical, and Geophysical Fluid Dynamics and Big Data I. San Francisco, CA December 15, 2014.
17. *A Rapid Turn-around, Scalable, Big Data Processing Capability for the JPL Airborne Snow Observatory (ASO) Mission*. Poster at the American Geophysical Union (AGU) Fall 2014

Meeting, IN23C: Technology Trends for Big Science Data Management. San Francisco, CA December 16, 2014.

18. *Making the Case for the ESGF and Apache: Long-Term Software Stewardship.* C. Mattmann. Presented at the 4th Annual Earth System Grid Federation and Ultrascale Visualization Climate Data Analysis Tools Conference. Livermore, CA, December 10, 2014.
19. *NASA's Story of Big Data Innovations and Applications.* C. Mattmann. Presented at the BIG DATA and Enterprise Architecture 2014 Summit, Crystal City, Virginia, November 21, 2014.
20. *A Next Generation CyberInfrastructure to Support Comparison of Satellite Observations with Climate Models.* C. Mattmann. Presented at the ESA/ESRIN 2014 Conference on Big Data from Space (BiDS 2014), Frascati, Italy, November 13, 2014.
21. *Real Data Science at NASA.* C. Mattmann. Presented at CS597 PhD seminar Course. University of Southern California. Los Angeles, CA, October 27, 2014.
22. *Real Data Science at NASA.* C. Mattmann. Presented at the California Institute of Technology Information Science and Technology Lunch Bunch seminar, Pasadena, CA, October 21, 2014.
23. *An Open Source Big Data Ecosystem.* C. Mattmann. Keynote Presentation at the Challenge of Big Data in Science (3rd International LSDMA Symposium). Karlsruhe Institute of Technology (KIT) Campus, Karlsruhe, Germany, October 7, 2014.
24. *Automatically Classifying and Interpreting Polar Datasets with Apache Tika.* A. Burgess, C. Mattmann. Poster Presentation at the 15th IEEE International Conference on Information Reuse and Integration. San Francisco, CA, August 13, 2014.
25. *DRAT! Automated Analysis of Software Licenses.* C. Mattmann. Presented (remotely) at the Summer 2014 ESIP Federation Meeting, Frisco, CO, July 9, 2014.
26. *Real Data Science at NASA.* Day #2 Keynote: IT & Enterprise Architecture Forum. Auckland, NZ. June 29 - 30, 2014.
`http://www.conferenz.co.nz/conferences/it-enterprise-architecture-forum`
27. *Data Science from the Trenches: NASA, Academia and Open Source Trial by Fire.* C. Mattmann. UCGIS 2014 Symposium Setting the Agenda: Research and Education for Today & Tomorrow - Invited Keynote, Pasadena, CA Monday May 19, 2014.
28. *Real Data Science at NASA.* C. Mattmann. Presented at the Workshop on High Performance Computing and Geospatial Analytics, Argonne National Laboratory (ANL), Chicago, IL, April 30, 2014.
29. *What can Apache OODT do for RAPID? (or how I learned to love OODT).* C. Mattmann. Presented to the SKA Science Data Processing and Low Frequency Work package elements leadership at Cavendish Laboratory, University of Cambridge, Cambridge, UK, March 6, 2014.
30. *A Research Agenda and Vision for Big Data at NASA.* C. Mattmann. Presented at the QCon London conference. London, UK, March 7, 2014.
31. *Real Data Science at NASA.* C. Mattmann. Presented at the QCon London conference. London, UK, March 5, 2014.
32. *BIG DATA! 24 Hour Near Real Time Processing and Computation for the JPL Airborne Snow Observatory.* C. Mattmann. Presented at the USC/Information Sciences Institute (ISI) AI Seminar. Marina Del Rey, CA, January 24, 2014.
33. *Apache Hadoop, Meet Rocket Science: Big Data at NASA.* C. Mattmann. BrightTalk Webinar, January 23, 2014.
34. *Update on the Regional Climate Model Evaluation System.* C. Mattmann. NSF ExArch breakout at the American Geophysical Union Meeting, San Francisco, CA, December 12, 2013.

35. *Introduction to the NASA Computational Modeling; Cyberinfrastructure (CMAC) program and architecture; and Regional Climate Model Evaluation System (RCMES).* C. Mattmann. Presented at the 3rd Annual Earth System Grid Federation; Ultra Scale Visualization, Climate Data Analysis Tools (UV-CDAT) Meeting, Livermore, CA, December 3, 2013.

36. *BIG DATA! 24 Hour Near Real Time Processing and Computation for the JPL Airborne Snow Observatory.* C. Mattmann. Presented at the San Gabriel Valley Linux User's Group (SGVLUG). Pasadena, CA, November 14, 2013.

37. *NSF RAPID Preliminary Design Review (PDR): OODT for RAPID.* C. Mattmann. Presented at NSF RAPID Preliminary Design Review (PDR). Remote Presentation. MIT Haystack Observatory, Medford, MA. October 21, 2013.

38. *Opportunities and Strategies for Big Data, Open Source Software in the Geosciences.* C. Mattmann. Presented at NSF EarthCube Domain End-User Workshop: Engaging the Atmospheric Cloud/Aerosol/Composition Community. George Mason University, Fairfax, VA, October 21, 2013.

39. *Big Data: 24 hour near real time processing and computation for the JPL Airborne Snow Observatory.* C. Mattmann. Presented at Celgene Corporation Big Data Seminar. Celgene Corporation, San Diego, CA September 20, 2013.

40. *Land Use Polar Infrastructure Drivers: the JPL Airborne Snow Observatory as Use Case.* C. Mattmann. Presented at the NSF Workshop on Cyberinfrastructure for Polar Sciences. McNamara Alumni Center - University of Minnesota, Minneapolis, MN, September 10-12, 2013.

41. *An Agency Strategy for Open Source.* C. Mattmann. Presented at DARPA Conference Center, I2O Leadership Program, Arlington, VA, September 3, 2013

42. *The IT Challenges of Big Data: Across Domains.* C. Mattmann. Presented at the Meaningful Use of Complex Medical Data (MUCMD) Symposium, Saban Research Institute, Children's Hospital Los Angeles (CHLA), Los Angeles, CA, August 17, 2013.

43. *XDATA Infrastructure: Open Source Analytics, Visualization and Integration.* C. Mattmann. Presented at the DARPA XDATA Summer Camp PI Meeting, Washington DC, July 30, 2013.

44. *Software and Algorithmic Preservation for Open Science Panel.* C. Mattmann. Presented at the NSF Data and Software Preservation for Open Science (DASPOS) meeting co-located with the 2013 ACM/IEEE Joint Conference on Digital Libraries. Indianapolis, IN, July 25, 2013.

45. *Big Data and Architecture in the Era of the Square Kilometre Array.* C. Mattmann. Presented at the ID Analytics Seminar, San Diego, CA April 5, 2013.

46. *Rapid, Flexible, and Open Source Big Data Technologies for the U.S. National Climate Assessment.* C. Mattmann. UCAR Software Engineering Assembly (SEA) Software Engineering Conference 2013, Boulder, CO, April 1, 2013.
`http://bit.ly/XSlSzh`

47. *Big Data and Architecture in the Era of the Square Kilometre Array.* C. Mattmann. Presented at the USC CSSE Annual Research Review (ARR), Los Angeles, CA March 14, 2013.

48. *Detecting radio-astronomical Fast Radio Transient Events via an OODT-based metadata processing pipeline.* L. Cinquini, A. Hart, C. Mattmann, S. Khudikyan. Presented at the Apache in Science Track at ApacheCon NA 2013. Portland, OR, February 27, 2013.

49. *Wengines, Workflows, and 2 years of advanced data processing in Apache OODT.* C. Mattmann. Presented at the Apache in Science Track at ApacheCon NA 2013. Portland, OR, February 27, 2013.
`http://www.youtube.com/watch?v=GZC3Zn3VXt8`

50. *Leveraging OODT tools and components within Climate Science and the Earth System Grid Federation.* L. Cinquini, D. Crichton, C. Mattmann. Presented at the Apache in Science Track at ApacheCon NA 2013. Portland, OR, February 27, 2013.

51. *Apache SIS*. C. Mattmann. Presented at the 4th Geospatial FOSS NOAA Meetup, Lens on Geospatial Processing, Feb 21, 2013, Silver Spring, MD.

52. *Using Apache Open Source Software OODT, Tika, Hadoop and Solr to Digest and Organize the Technical Content Available on XNET: a Demonstration of Quick Site Analysis*. C. Mattmann. Presented at the DARPA XDATA Kickoff Meetings. Washington, D.C., January 31, 2013.

53. *Open Source Cluster Breakout*. C. Mattmann. Presented at the 2013 Winter ESIP Federation Meeting. Washington, D.C., Wednesday January 9, 2013.

54. *Leveraging JPL's Regional Climate Model Evaluation System in the Coordinated Regional Downscaling Experiment (CORDEX)*. C. Mattmann. AGU Fall Meeting 2012, NASA Speaker Booth. December 4, 2012.

55. *A Tour of Big Data, Open Source Data Management Technologies from the Apache Software Foundation*. C. Mattmann. AGU Fall Meeting 2012, IN11F. Open Source Technologies and Architectures Facilitating Science Data Center Collaboration and Management II Session. December 3, 2012.

56. *Monitoring the Data Tide*. C. Mattmann. International Keynote Speech. ITEX 2012 (Internet Technology Expo). Auckland, New Zealand, November 8, 2012.
`http://www.conferenz.co.nz/conferences/itex-new-zealand`

57. *Big Data/Archiving Challenges and Solutions*. C. Mattmann Big Data "Mini Workshop": Astronomy and Astrophysics. California Institute of Technology Keck Institute for Space Studies. Pasadena, CA, Thursday, November 1, 2012.

58. *Building Model Evaluation And Decision Support Capacity For CORDEX*. C. Mattmann, D. Waliser. Presented at the NSF G8 Initiative: ExArch: Climate Analytics on Distributed Exascale Data Archives, Winsor, London, UK, October 2, 2012.

59. *Scalable Data Mining and Archiving in the Era of the Square Kilometre Array*. C. Mattmann. HPC User Forum, Dearborn, Michigan, September 19, 2012.

60. *Water management, power grids Panel*. C. Mattmann, J. Frew, M. Denesuk. 6th Extremely Large Databases (XLDB) Invitational Workshop. Stanford, California, September 13, 2012.

61. *Software Communities at ESIP via Open Source*. C. Mattmann. ESIP Information Technology and Interoperability Cluster: Rants and Raves (IT & I Rants/Raves). Virtual Presentation. September 6, 2012.

62. *Developing an Open Source Strategy for NASA Earth Science Data Systems*. C. Mattmann. IEEE International Conference on Information Integration and Reuse (IRI-2012), Las Vegas, NV, August 10, 2012.

63. *A Regional Climate Model Evaluation System Based on Contemporary Satellite and other Observations for Assessing Regional Climate Model Fidelity*. C. Mattmann. JPL Center for Climate Sciences Summer School on Using Satellite Observations to Advance Climate Models. Keck Institute, California Institute of Technology, Pasadena, CA, August 8, 2012.
`http://climatesciences.jpl.nasa.gov/summer-school/2012-school`
`http://climatesciences.jpl.nasa.gov/page/25`

64. *Developing Open Source Software for NASA (or "how I learned to stop asking permission")*. C. Mattmann. ESIP Federation Summer 2012 Meeting, Madison, WI, Ignite Talk, July 18, 2012.
`http://vimeo.com/47623282`

65. *Developing Open Source Software for NASA (or "how I learned to stop asking permission")*. C. Mattmann. Open Source Summit organized by NASA, the State Department and the VA. University of Maryland, Washington D.C., Wednesday June 20, 2012.
`http://vimeo.com/45109553`

66. *Big Data Challenges at NASA*. C. Mattmann. Hadoop Summit 2012. San Jose Convention Center, June 13, 2012.

67. *NASA, Big Data, and Apache OODT.* C. Mattmann. Pasadena Java Users Group (JUG). Pasadena, CA (Idealab), May 21, 2012.

68. *Big Data Workflows for Science.* C. Mattmann. National Science Foundation (NSF) Earth Cube Workflow Workshop, Invited Talk, Virtual Participation, April 13, 2012.

69. *Open Source Panel at So Cal CWIC'12.* C. Mattmann. Celebration of Women in Computing in Southern California (CWIC-SoCal), April 15, 2012, Santa Ana, CA.

70. *Enabling rapid, scalable and effective comparison of model outputs with remote sensing data using the Regional Climate Model Evaluation System (RCMES).* C. Mattmann, D. Waliser. ADSIMNOR-CORDEX workshop on Arctic climate modeling results and needs, Norrkoping, Sweden, March 20, 2012.

71. *A Regional Climate Model Evaluation System based on contemporary Satellite and other Observations for Assessing Regional Climate Model Fidelity.* C. Mattmann, D. Waliser. ADSIMNOR-CORDEX workshop on Arctic climate modeling results and needs, Norrkoping, Sweden, March 20, 2012.

72. *The Apache OODT Ecosystem: A Birds Eye View.* C. Mattmann. UCAR Software Engineering Assembly (SEA) Software Engineering Conference 2012, February 23, 2012.

73. *Understanding how to Best Leverage Open Source Data Management Software: A Roadmap.* C. Mattmann. Boulder Earth and Space Science Informatics Group (BESSIG), February 22, 2012. `http://bit.ly/zWC3zx`

74. *A Strategy for Open Source Software at NASA.* C. Mattmann. UCAR Software Engineering Assembly (SEA) Software Engineering Conference 2012, February 22, 2012.

75. *Realizing the Benefit of (Re-)using Open Source Software.* C. Mattmann. 2012 Winter ESIP Federation Meeting, Washington D.C., January 4, 2012.

76. *Defining an Open Source Strategy for NASA.* C. Mattmann. 2011 Fall Meeting, AGU, San Francisco, California, December 6, 2011.

77. *Apache Tika: 1 point Oh!.* C. Mattmann. ApacheCon NA 2011, Vancouver, BC, November 10, 2011. Available at: `http://na11.apachecon.com/talks/19391`.

78. *Supercharging your Apache OODT deployments with the Process Control System.* C. Mattmann. ApacheCon NA 2011, Vancouver, BC, November 9, 2011. Available at: `http://na11.apachecon.com/talks/19376`.

79. *A look into the Apache OODT ecosystem.* C. Mattmann. ApacheCon NA 2011, Vancouver, BC, November 9, 2011. Available at: `http://na11.apachecon.com/talks/19389`.

80. *An Introduction to the Apache OODT Ecosystem.* C. Mattmann. 10th NASA Earth Science Data Systems Working Group Meetings, Newport News, Virginia, November 2, 2011.

81. *NASA's Earth Science Data System Software Reuse WG: Year in Review 2011.* C. Mattmann, R. R. Downs, P. Ramirez, C. Goodale, A. Hart. 10th NASA Earth Science Data Systems Working Group Meetings, Poster Session, Newport News, Virginia, November 2, 2011.

82. *Discovering and Utilizing Coastal Ocean Data via NASA's CMDS.* E. Armstrong, C. Mattmann, F. O'Brien, L. Cinquini, G. Resneck, P. Zimdars. 10th NASA Earth Science Data Systems Working Group Meetings, Poster Session, Newport News, Virginia, November 2, 2011.

83. *Architecture Panel.* Moderator: J. Hammerbacher. C. Mattmann, D. Crichton, Z. Ives. Meaningful Use of Complex Medical Data (MUCMD) Symposium, Saban Research Institute, Children's Hospital Los Angeles (CHLA), Los Angeles, CA, August 26, 2011.

84. *Understanding the Meaningful Use of Open Source Software.* C. Mattmann. Meaningful Use of Complex Medical Data (MUCMD) Symposium, Saban Research Institute, Children's Hospital Los Angeles (CHLA), Los Angeles, CA, August 26, 2011.

85. *Software Reuse Methods to Improve Technological Infrastructure for e-Science.* C. Mattmann, J. Marshall, R. Downs. IEEE IRI Workshop on Issues and Challenges in Social Computing 2011, Las Vegas, NV, August 2nd, 2011.

86. *Open Source Software in the Sciences.* C. Mattmann. 2011 Summer ESIP Federation Meeting, Santa Fe, NM, July 14, 2011.

87. *Evaluating Cloud Computing in the NASA DESDynI Ground Data System.* C. Mattmann. 2011 Summer ESIP Federation Meeting, Santa Fe, NM, July 14, 2011.

88. *A report on THREDDS catalogs/OPeNDAP implementations for earth science data access and discovery.* Ed Armstrong, C. Mattmann. 2011 Summer ESIP Federation Meeting, Santa Fe, NM, July 12, 2011.

89. *Measuring the Suitability of Software for Reuse Using NASA's Software Reuse Readiness Levels.* C. Mattmann. SQI Technical Seminar, JPL, Pasadena, CA, June 15, 2011.

90. *Data Management Panel.* Speakers: R. Hanisch, C. Mattmann. Innovations in Data-Intensive Astronomy (2011) Meeting, Green Bank, WV, May 2-May 5, 2011.

91. *Understanding and Comparing Remote Sensing Data to Model Output.* International Conference on the Coordinated Regional Climate Downscaling Experiment - CORDEX Training Workshop, Trieste, Italy, March 21-March 26, 2011.

92. *A View from the Trenches: Open-source, Data-intensive Software.* C. Mattmann. Presented at the USC CSSE Annual Research Review (ARR), Los Angeles, CA March 9, 2011.

93. *NASA, JPL, CHLA and Data Systems Architecture.* C. Mattmann. Presented at the BedmasterEx Meeting, San Diego, CA January 15, 2011.

94. *Packaging Software Assets for Reuse.* C. Mattmann, J. Marshall, R. Downs. Presented at the 2010 AGU Fall Meeting, San Francisco, CA, December 17, 2010.

95. *Lessons Learned in the Development of a Web-scale Search Engine: Nutch2 and beyond.* C. Mattmann. ApacheCon NA 2010 - Lucene and friends Track, Altanta, GA, November 5, 2010.

96. *Scientific data curation and processing with Apache Tika.* C. Mattmann. ApacheCon NA 2010 - Lucene and friends Track, Altanta, GA, November 5, 2010.

97. *Reuse WG: Year in Review*, C. Mattmann, R. R. Downs, J. Marshall. 9th NASA Earth Science Data Systems Working Group Meetings, Poster Session, New Orleans, Louisiana, October 21, 2010.

98. *The NASA Coastal Marine Discovery Service (CMDS).* E. Armstrong, C. Mattmann, D. Kiefer, F. O'Brien, S. McCleese, V. Hwang. 9th NASA Earth Science Data Systems Working Group Meetings, Poster Session, New Orleans, Louisiana, October 21, 2010.

99. *Medical/Bioinformatics Informatics Panel.* Speakers: J. Cohn, R. Guha, T. Malik, D. Kale, C. Mattmann, E. Kolker, M. Atkinson. 4th Extremely Large Databases Workshop (XLDB4), Menlo Park, CA, October 5th, 2010.

100. *NASA JPL and Data Systems Architecture.* C. Mattmann. Presented to Search/Interaction Team at AT&T Interactive. Glendale, CA September 27, 2010.

101. *Reuse of Software Assets for the NASA Earth Science Decadal Survey Missions.* C. Mattmann, R. Downs, J. Marshall, N. Most, S. Samadi. Presented at the 30th IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2010) Poster Session, Honolulu, HI, July 28th, 2010.

102. *Exploiting Reference Architecture to Guide the NASA Earth Science System Enterprise.* C. Mattmann. Presented at the 2010 ESIP Summer Federation Meeting, NASA Earth Science Data Systems (ESDS) Software Process and Standards WG breakout session on NASA Earth Science Reference Architectures. Knoxville, TN, July 22, 2010.

103. *Reuse Tools to Help Enable Climate Research in NASA Missions.* C. Mattmann, R. R. Downs, J. J. Marshall, N. F. Most. Presented at the 2010 ESIP Summer Federation Meeting Poster Session. Knoxville, TN, July 21, 2010.

104. *The Climate Data eXchange (CDX).* C. Mattmann. Presented at the 2010 ESIP Summer Federation Meeting, Technical Workshops. Knoxville, TN, July 20, 2010.

105. *Object Oriented Data Technology (OODT).* C. Mattmann. Presented at the 2010 ESIP Summer Federation Meeting, Technical Workshops. Knoxville, TN, July 20, 2010.

106. *Informatics and the caTissue Wrapper for the Early Detection Research Network.* C. Mattmann. Presented at the caBIG Tissue Banks and Pathology Tools and Integrated Cancer Research Workspaces Joint Face-to-Face Meeting. UCLA, Los Angeles, CA, May 4, 2010.

107. *Reuse Readiness Levels 1.0 Discussion.* C. Mattmann. Presented at the NASA Earth Science Data Systems (ESDS) Software Reuse Working Group (WG) Workshop on Reuse Readiness Levels. Washington D.C., April 7, 2010.

108. *An Architecture-based Framework for Biomarker Discovery and Management in the Early Detection Research Network.* C. Mattmann. Presented at the 6th Laboratory Informatics Conference, Philadelphia, PA, March 31, 2010.

109. *Open Source and the Cloud: IT Opportunities and Challenges Panel.* Speakers. J. Urquhart, C. Mattmann, E. Brescia. Open Source Business Conference (OSBC 2010). San Francisco, CA, March 17, 2010.

110. *An Architecture and Analysis Environment for Model to Observational Data Intercomparisons.* C. Mattmann, A. Braverman, D. Cricthon and, D. Williams. Presented at the AGU Fall Meeting, San Francisco, CA, December 14, 2009.

111. *Enabling Interoperability – Supporting a Diversity of Search Paradigms Using Shared Ontologies and Federated Registries.* J. S. Hughes, D. Cricthon, S. Hardman, C. Mattmann, and P. Ramirez. Presented at the AGU Fall Meeting, San Francisco, CA, December 14, 2009.

112. *A Distributed Computing Infrastructure for the Evaluation of Climate Models using NASA Observational Data.* C. Mattmann, D. Crichton, A. Braverman, D. Williams, M. Gunson, D. Woollard, S. Kelly and M. Cayanan. Presented at the IEEE ICDM Workshop on Knowledge Discovery from Climate Data. Miami, FL, December 6th, 2009.

113. *Science Data System Architectural Approach for JPL-led Decadal Survey Missions.* C. Mattmann. Presented at the 8th Earth Science Data Systems Working Group (ESDSWG) Conference. Wilmington, DE, October 20th-22nd, 2009.

114. *An Adaptable Framework for Modeling, Processing, Distribution and Analysis of Science Data.* D. Freeborn, D.Woollard, C. Mattmann, S. Hardman, D. Crichton, P. Ramirez. Presented at the 8th Earth Science Data Systems Working Group (ESDSWG) Conference Poster Session. Wilmington, DE, October 20th-22nd, 2009.

115. *Integrating Modeling Capabilities in a Production Environment to Further Forecasting and Decision Support.* D. Woollard, D. Freeborn, D. Crichton, C. Mattmann, C. Norton, and E. Kay-Im. Presented at the 8th Earth Science Data Systems Working Group (ESDSWG) Conference Poster Session. Wilmington, DE, October 20th-22nd, 2009.

116. *A Reusable Process Control System Architecture for the Orbiting Carbon Observatory and NPP Sounder PEATE missions.* C. Mattmann. Section 388 Instrument and Science Data Systems Technical Seminar. Pasadena, CA September 17, 2009.

117. *Earth and Environmental Sciences Panel.* Speakers: P. Fox, N. Oza, and C. Mattmann. 3rd Extremely Large Databases Workshop (XLDB3), Lyon, France, August 28th-29th, 2009.

118. *A Reusable Process Control System Framework for the Orbiting Carbon Observatory and NPP Sounder PEATE missions.* C. Mattmann, D. Freeborn, D. Crichton, B. Foster, A. Hart, D. Woollard, S. Hardman, P. Ramirez, S. Kelly, A. Y. Chang, C. E. Miller. Presented at the

3rd IEEE Intl' Conference on Space Mission Challenges for Information Technology (SMC-IT 2009), Pasadena, CA, July 19 - 23, 2009.

119. *JPL's Global Change and Energy IT Architecture.* C. Mattmann, D. Crichton. Presented at the IT for Climate Research Workshop held in conjunction with the 3rd IEEE Intl' Conference on Space Mission Challenges for Information Technology (SMC-IT 2009), Pasadena, CA, July 19 - 23, 2009.

120. *A Virtual Oceanographic Data Center.* S. McCleese, C. Mattmann, R. Raskin, D. Crichton, S. Hardman. Presented at the 18th ACM/IEEE International World Wide Web Conference (WWW2009) – Developers Track, Madrid, Spain, April 24th, 2009.

121. *An Architecture-based Framework For Understanding Large-Volume Data Distribution.* C. Mattmann. Presented at the USC CSE Annual Research Review (ARR), March 17th, Los Angeles, CA 2009.

122. *A Service Oriented Architecture for Highly Distributed and Data-Intensive Geospatial Grid Software Systems.* C. Mattmann, R. Raskin, D. Crichton. Presented at the GIScience 2008 Workshop on Design of Service-Oriented Architecture (SOA) for Geospatial Science, Park City, UT, September 23, 2008.

123. *Facilitating Distributed Climate Modeling Research and Analysis via the Climate Data eXchange.* D. Crichton, C. Mattmann, A. Braverman. Presented at the Global Organization for Earth System Science Portals (GO-ESSP) 2008 Workshop, Seattle, WA, September 17-19, 2008.

124. *A Model Driven Architecture for Highly Distributed, Data Intensive Systems.* D. Crichton, P. Ramirez, C. Mattmann and J. S. Hughes. Presented at the DARPA Workshop on Digital Object Storage and Retrieval (DOSR), Chantilly, Virginia, July 15-16, 2008.

125. *Apache Tika -An extensible, configurable content-analysis framework.* J. Zitting, C. Mattmann. Presented at the ApacheCon US 2007, November 15, 2007, Atlanta, GA, 2007.

126. *A Reference Framework for Requirements and Architecture in Biomedical Grid Systems.* C. Mattmann, V. Perrone, S. Kelly, D. Crichton, A. Finkelstein, N. Medvidovic. Presented at the 2007 IEEE International Conference on Information Integration and Reuse (IRI-2007), August 15th, Las Vegas, NV, 2007.

127. *DISCO: A Framework for Classification and Selection of Software Connectors for Highly Distributed and Voluminous Data-intensive Systems*, C. Mattmann, D. Woollard, N. Medvidovic, T. Johns, R. Mahjourian. Presented at the 2007 UC Irvine ISR Research Forum, June 1, Irvine, CA, 2007.

128. *Software Connector Classification and Selection for Data-intensive Systems*, C. Mattmann, D. Woollard, N. Medvidovic, R. Mahjourian. Presented at the 2nd International Workshop on Incorporating COTS Software into Software Systems: Tools and Techniques (IWICSS), May 22nd, Minneapolis, MN, 2007.

129. *A Framework for the Assessment and Selection of Software Components and Connectors in COTS-based Architectures*, C. Mattmann, J. Bhuta. Presented at the 2nd International Workshop on Incorporating COTS Software into Software Systems: Tools and Techniques (IWICSS), May 22nd, Minneapolis, MN, 2007.

130. *A Framework for the Assessment and Selection of Software Components and Connectors in COTS-based Architectures*, J. Bhuta, C. Mattmann. Presented at the USC CSE Annual Research Review (ARR), February 13th, Los Angeles, CA 2007.

131. *A Distributed Information Services Architecture to Support Biomarker Discovery in Early Detection of Cancer*, D. Crichton, S. Kelly, C. Mattmann, Q. Xiao, J. S. Hughes, J. Oh, M. Thornquist, D. Johnsey, S. Srivastava, L. Esserman, B. Bigbee. Presented at the 2nd IEEE International Conference on e-Science and Grid Computing, December 4th, Amsterdam, the Netherlands, 2006.

132. *A Framework for Selecting Large-scale, Distributed, Data-intensive Software Connectors.* C. Mattmann, N. Medvidovic, and D. Crichton. Presented at the 2006 UC Irvine ISR Research Forum, June 2, Irvine, CA, 2006.

133. *A Software Architecture-based Framework for Highly Distributed and Data Intensive Scientific Applications.* C. Mattmann, D. Crichton, N. Medvidovic, and S. Hughes. Presented at the 28th ACM/ IEEE International Conference on Software Engineering (ICSE) Software Engineering Achievements and Challenges Track. May 24th, Shanghai, China, 2006.

134. *A Classification and Evaluation of Data Movement Technologies for the Delivery of Highly Voluminous Scientific Data Products.* C. Mattmann, S. Kelly, D. Crichton, J. S. Hughes, S. Hardman, P. Ramirez and R. Joyner. Presented at the NASA/IEEE Conference on Mass Storage Systems and Technologies. May 16th, College Park, MD, 2006.

135. *Tera/Petabyte Data Distribution Architectures.* C. Mattmann. Presented at the USC CSE Annual Research Review (ARR), March 14th, Los Angeles, CA 2006.

136. *Software Connectors for Highly Distributed and Voluminous Data-intensive Systems.* C. Mattmann. Qualifying Exam Presentation, University of Southern California, January 20th, Los Angeles, CA, 2006.

137. *The Movement Towards Grid Architectures in Planetary Science.* D. Crichton, J. S. Hughes and C. Mattmann. Presented at the 14th Global Grid Forum (GGF-14), June 26th-29th, Chicago, IL, 2005.

138. *A Light-weight, Event-based, Grid Infrastructure for Data-intensive Environments.* C. Mattmann, N. Medvidovic, D. Crichton, S. Malek, M. Mikic-Rakic, N. Beckman. Presented at the 2005 UC Irvine ISR Research Forum, June 3, Irvine, CA, 2005.

139. *Unlocking the Grid.* C. Mattmann, N. Medvidovic, P. Ramirez and V. Jakobac. Presented at the 8th ACM SIGSOFT Symposium on Component-based Software Engineering (CBSE8), May 15th, St. Louis, MO, 2005.

140. *Leveraging Architectural Models to Inject Trust into Software Systems.* S. Banerjee, C. Mattmann, N. Medvidovic, and L. Golubchik. Presented at the 2005 ICSE Workshop on Software Engineering for Secure Systems (SESS05), May 15th, St. Louis, MO, 2005.

141. *A Grid-based Lightweight Infrastructure for Data-intensive Environments.* C. Mattmann, S. Malek, N. Beckman, M. Mikic-Rakic, N. Medvidovic and D. Crichton. Presented at the USC CSE Annual Research Review (ARR), Los Angeles, CA 2005.

142. *GLIDE: A Grid-based, Lightweight Infrastructure for Data-intensive Environments.* C. Mattmann, S. Malek, N. Beckman, M. Mikic-Rakic, N. Medvidovic and D. Crichton. Presented at the 2005 European Grid Conference, Amsterdam, the Netherlands, February 2005.

143. *ACE: Improving Search Engines via Automatic Concept Extraction.* P. Ramirez and C. Mattmann. Presented at the 5th IEEE Conference on Information Reuse and Integration (IEEE-IRI-2004). Las Vegas, NV, November 2004.

144. *Software Architecture for Large-scale, Distributed, Data-Intensive Systems.* C. Mattmann, D. Crichton, J. S. Hughes, S. Kelly and P. Ramirez. Presented at the 4th IEEE/IFIP Working Conference on Software Architecture (WICSA-4), Oslo, Norway, June 2004.

145. *An Architectural Style for Highly Data-Intensive Systems.* C. Mattmann, D. Crichton and N. Medvidovic. Presented at the 2004 UC Irvine ISR Research Forum, Irvine, CA, June 2004.

146. *Packaging Data Products using Data Grid Middleware for Deep Space Mission Systems.* C. Mattmann, P. Ramirez, D. Crichton and J.S. Hughes. Presented at the 8th International Conference on Space Operations (Spaceops-2004), Montreal, Canada, May 2004.

147. *The Grid and Information Architecture.* C. Mattmann, D. Crichton, J.S. Hughes. Presented at Consultative Committee for Space Data Systems (CCSDS) Information Architecture Working Group, Montreal, Canada, May 2004.

148. *A Roadmap for Tool Support in Space Data System Software Architectures.* C. Mattmann, D. Crichton, J.S. Hughes. Presented at Consultative Committee for Space Data Systems (CCSDS) Information Architecture Working Group, Montreal, Canada, May 2004.

149. *A Software Architecture for Highly Data-Intensive Systems.* C. Mattmann. Presented at the USC CSE Annual Research Review (ARR), Los Angeles, CA 2004

150. *A Data Grid Framework for Managing Planetary Science Data.* D. Crichton, J.S. Hughes, C. Mattmann. Presented to the Center for Applied Scientific Computing (CASC) at Lawrence Livermore National Laboratory (LLNL), Livermore, California, December 2003.

151. *Towards a Distributed Information Architecture for Avionics Data.* C. Mattmann, D. Freeborn, and D. Crichton. Presented at the 2nd IADIS International Conference WWW/Internet, Algarve, Portugal, November 2003

152. *Tool Support for Modeling Space Data System Software Architectures*, C. Mattmann, D. Crichton, and J.S. Hughes. Presented at Consultative Committee for Space Data Systems (CCSDS) Information Architecture BOF (Birds of a Feather), Columbia, Maryland, October 2003.

153. *A Distributed Data Architecture for Mars Odyssey Data Distribution*, D. Crichton, J.S. Hughes, C. Mattmann. Presented to Center for Grid Technologies, Information Sciences Institute, Marina Del Rey, CA August 2003.

## Ph.D. Committee Service

**University of Southern California, Computer Science Department**
Thamme Gowda
"The Inevitable Problem of Rare Phenomena Learning in Machine Translation"
University of Southern California, Ph.D. in Computer Science
Advisor: Jonathan May, Information Sciences Institute (ISI), University of Southern California
*Passed Thesis Defense*, April 2022

**University of Southern California, Computer Science Department**
Kan Qi
"Incremental Effort Estimation via Transaction Analysis"
University of Southern California, Ph.D. in Computer Science
Advisor: Barry Boehm, University of Southern California
*Thesis Proposal Defense (Qualifying Exam)*, September 2019

**Sapienza University of Rome, Computer Science Department**
Giuseppe Totaro
"High Performance Computing for Information Retrieval and Digital Investigation"
Sapienza University of Rome, Ph.D. in Computer Science
Advisor: Massimo Bernaschi, Sapienza University of Rome
*Passed Thesis Defense (Ph.D. Defense)*, December 2015
Now a *Cyber Investigator* at *Europol*
Formerly a *Data Scientist Level 2* at *NASA JPL*

**University of Southern California, Computer Science Department**
Jae Young Bang
"Understanding and Reducing the Cost of Collaborative Software Design"
University of Southern California, Ph.D. in Computer Science
Advisor: Nenad Medvidovic, University of Southern California
*Passed Screening*
*Passed Thesis Proposal Defense (Qualifying Exam)*, May 2014
*Passed Thesis Defense (Ph.D. Defense)*, March 2015

**Howard University, Department of Atmospheric Sciences**
Kim Dionne Whitehall

"Investigating an Automated Method to Explore Mesoscale Convective Complexes in West Africa"
Howard University, Ph.D. in Atmospheric Sciences
Advisor: Gregory Jenkins, Howard University
*Passed Thesis Proposal Defense (Qualifying Exam)*, April 2013
*Passed Thesis Defense (Ph.D. Defense)*, April 2014
Formerly a *Data Scientist Level 2* at *NASA JPL*

## Postdoctoral Mentoring

**USC Computer Science Postdoctoral Sponsor - March 2015 - September 2015**
Ji-Hyun Oh
Ph.D. Seoul National University
Project Title: "Information Retrieval of Geosciences Open Source Software"
At present a *Research Fellow* at APEC Climate Center, South Korea.

**USC Computer Science Postdoctoral Sponsor - October 2015 - September 2016**
**JPL/Caltech Postdoctoral Sponsor - October 2014 - September 2015**
Janet Ruth Wyngaard
Ph.D. University of Cape Town
Project Title: "Data Science for Radio Astronomy and Climate Science"
Now a *Professor* at University of Cape Town, South Africa, in January 2019.
Formerly a *Data Science Technologist* at University of Notre Dame's Center for Research Computing (CRC) in January 2017.

**USC Computer Science Postdoctoral Sponsor - March 2014 - April 2015**
Annie Bryant Burgess
Ph.D. University of Utah
Project Title: "An open source framework for metadata exploration and discovery of Polar Data"
At present the *Community Director* at the Foundation for Earth Science, Boulder, CO

**JPL/Caltech Postdoctoral Sponsor - 2011 - 2014**
Paul Loikith
Ph.D. Rutgers University
Project Title: "Enabling Regional Climate Model Evaluation: A Critical Use of Observations for Establishing Core NCA Capabilities"
Co-advised with: Dr. Duane Waliser, JPL
At present an *Assistant Professor* at Portland State University, Portland, OR

**JPL/Caltech Postdoctoral Sponsor - 2011 - 2014**
Huikyo Lee
Ph.D. University of Illinois
Project Title: "Enabling Regional Climate Model Evaluation: A Critical Use of Observations for Establishing Core NCA Capabilities"
Co-advised with: Dr. Duane Waliser, JPL
At present a *Data Scientist II* at the Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA

**JPL/Caltech Postdoctoral Sponsor - 2011 - January 2014**
Karl Rittger
Ph.D. University of California Santa Barbara
Project Title: "Snow and Ice Climatology of the Western US and Alaska from MODIS"
Co-advised with: Dr. Thomas Painter, JPL
At present a *Scientist II* at the National Snow and Ice Data Center (NSIDC), Boulder, CO.

**JPL/Caltech Postdoctoral Sponsor - 2011 - October 2013**
Felix C. Seidel-Caprez

Ph.D. University of Zurich
Project Title: "Snow and Ice Climatology of the Western US and Alaska from MODIS"
Co-advised with: Dr. Thomas Painter, JPL
At present an *Algorithm Scientist II* at NASA Jet Propulsion Laboratory.

MASTERS STUDENTS

**University of California Los Angeles - Computer Science Department**
Eric Marcin-Cuddy
"Thoughtful Web UI/UX Design"
Advisor: D. Stott Parker, UCLA & C. Mattmann, USC
*Graduated*

OTHER MENTORING

**Google Summer of Code - 2018**
Ahmed Ifhaam
University of Kelaniya, Sri Lanka
Undergraduate Student
Co-Mentored with Imesha Sudasingha for Apache OODT
Project Title: "Take next steps on Proteus - evolve DRAT web interface"
Sponsored by: Google and the Apache Software Foundation

**Google Summer of Code - 2017**
Imesha Sudasingha
University of Moratuwa, Sri Lanka
Undergraduate Student
Co-Mentored with Tom Barber for Apache OODT
Project Title: "Apache OODT : Rework OODT configuration to make use of Zookeeper for distributed configuration management"
Sponsored by: Google and the Apache Software Foundation
`https://goo.gl/iV2Yhx`
*Currently VP, Apache OODT at the Apache Software Foundation*

**Google Summer of Code - 2017**
Thejan Wijesinghe
University of Moratuwa, Sri Lanka
Undergraduate Student
Co-Mentored with Thamme Gowda for Apache Tika
Project Title: "Supporting Image-to-Text (Image Captioning) in Tika for Image MIME Types"
Sponsored by: Google and the Apache Software Foundation
`https://wiki.apache.org/tika/GSOC/GSoC2017`
`https://medium.com/@thejanwijesinghe/how-i-started-my-gsoc-journey-5d6c10dc73b1`

**Viterbi India Program - 2016**
Zarana Parekh
Dhirubhai Ambani Institute of Information and Communication Technology, India
Undergraduate Student
Project Title: "Improving accuracy of Tesseract to extract serial numbers from images of counterfeit electronics"
Sponsored by US Viterbi India Program
Recipient of a prestigious *GHC Student Scholarship to attend the 2017 Grace Hopper Celebration of Women in Computing* based on her project
Recipient of a prestigious *Google Anita Borg Memorial Scholarship Asia Pacific 2016* based on her project.
Now attending *Carnegie Mellon University and its prestigious MDCS (Masters in Data & Computational Sciences) program*

**Google Summer of Code - 2016**
Anastasija Mensikova
Trinity College, CT
Mentor for Apache Tika, Apache OpenNLP
Project Title: "Sentiment Analysis Parser: Combines Apache OpenNLP and Apache Tika and provides facilities for automatically deriving sentiment from text."
Sponsored by: Google and the Apache Software Foundation
Accepted *JPL Year Around Internship (YIP) program offer and interned at JPL Summer 2017*
Accepted *JPL Year Around Internship (YIP) program offer and currently interning at JPL Summer 2018*
Accepted *into PhD program in Computer Science at George Washington University*

**Google Summer of Code - 2015**
Radu Manole
Alexandru Ioan Cuza University of IASI, Romania
Mentor for Apache OODT
Project Title: "Replace OODT's XMLPRC with Avro's RPC"
Co-advised with: Dr. Lewis John McGibbney
Sponsored by: Google and the Apache Software Foundation

**Google Summer of Code - 2015**
Nisala Mendis
University of Colombo, Sri Lanka
Project Title: "Microformats2 Support for Apache Any23"
Co-advised with: Dr. Lewis John McGibbney
Sponsored by: Google and the Apache Software Foundation

**Google Summer of Code - 2013**
Rajith Siriwardana
University of Moratuwa
Mentor for Apache OODT
Project Title: "Monitor that plugs into ganglia"
Sponsored by: Google and the Apache Software Foundation

**University of Moratura, Sri Lanka - 2012**
Sanjaya Medonsa
Project Title: "Integration of Apache Airavata with Data Intensive Systems"
Co-advised with: Dr. Shahani Weerawarana, Visiting Lecturer, University of Moratura, Visiting Researcher, Indiana University

**Google Summer of Code - 2012**
Ross Laidlaw
Oxford University
Mentor for Apache OODT, Apache SIS
Project Title: "Automated Publishing of GeoRSS Data from OODT File Manager to SIS"
Sponsored by: Google, and the Apache Software Foundation

**JPL Graduate Fellowship - 2012, 2013**
Kim Whitehall
Howard University, Ph.D. student in Atmospheric Sciences
Advisor: Gregory Jenkins, Howard University
Advised at JPL with assistance from: Duane Waliser, Jinwon Kim
Sponsored by: NASA National Climate Assessment/RCMES project

**JPL High School Summer Student Program - 2011, 2012, 2013**
Jesslyn Whittell
Advised with assistance from: Paul Ramirez, Cameron Goodale, Andrew F. Hart
Sponsored by: NASA Earth Science Data System Software Reuse WG and NCI Early Detection Research Network (EDRN) project
At present an *undergraduate student in Computer Science* at UC Berkeley.

**Southern California Bioinformatics Summer Institute (So Cal BSI) - 2009**
Andrew Clark
Advised with assistance from: Andrew F. Hart and Dan Crichton
Sponsored by: National Science Foundation and the National Institutes of Health

**Southern California Bioinformatics Summer Institute (So Cal BSI) - 2004**
Ronny Chan
Kim Ngo
Co-advised with: Dr. Tina Xiao, Roshanak Roshandel, Paul Ramirez, Dan Crichton
Sponsored by: National Science Foundation and the National Institutes of Health

## Professional Service

### Program Committee Membership

1. SC'20 Workshop Committee Member: Deep Learning on Supercomputers on the The International Conference for High Performance Computing, Networking, Storage, and Analysis (SC20), Nov 15th, 2020, Atlanta, GA.
2. SC'19 Workshop Committee Member: Deep Learning on Supercomputers on the The International Conference for High Performance Computing, Networking, Storage, and Analysis (SC19), November 17-22, 2019, Denver, CO.
3. Program Committee, International Conference on Software Architecture (ICSA), March 25-29, 2019, Hamburg, Germany.
4. Program Committee, International Conference on Software Architecture (ICSA), April 30-May 4, 2018 Seattle, USA.
5. Program Committee, International Conference on Software Architecture (ICSA), April 3-7, 2017, Gothenburg, Sweden.
6. Program Committee, First International Workshop on Establishing the Community-Wide Infrastructure for Architecture-Based Software Engineering (ECASE'17), December 2016.
7. Program Committee, Workshop on Sustainable Software for Science: Practice and Experiences (WSSSPE), July 2016.
8. Program Committee, XSEDE15: Scientific advancements enabled by enhanced cyberinfrastructure, 2015.
9. Program Committee, Working IEEE/IFIP Conference on Software Architecture (WICSA), Montreal, Canada, 2015.
10. Program Committee, SC 2014: 2nd Workshop on Sustainable Software for Science: Practice and Experiences (WSSSPE), Sunday, November 16, 2014, New Orleans, LA.
11. Program Committee, XSEDE14: Software and Software Environments (Gateways, Bridging, and Application Developers), 2014.
12. Program Committee, Meaningful Use of Complex Medical Data (MUCMD) Symposium, August 8-9, 2014, Children's Hospital Los Angeles, Saban Auditorium.
13. Program Committee, Meaningful Use of Complex Medical Data (MUCMD) Symposium, August 16-17 2013 Children's Hospital Los Angeles, Saban Auditorium.

14. Program Committee, Working IEEE/IFIP Conference on Software Architecture (WICSA), Sydney, 2014.
15. Program Committee, SC 2013: 1st Workshop on Sustainable Software for Science: Practice and Experiences (WSSSPE), Sunday, November 17, 2013, Denver, CO.
16. Program Committee, ICSR 2013: International Workshop on Designing Reusable Components and Measuring Reusability (DReMeR '13), 2013.
17. Program Committee, XSEDE13: Gateway to Discovery Conference, 2013.
18. Program Committee, Meaningful Use of Complex Medical Data (MUCMD) Symposium, August 26-27 2011 Children's Hospital Los Angeles, Saban Auditorium.
19. Program Committee Member, IEEE International Workshop on the Future of Software Engineering for/in the Cloud (FoSEC), Washington DC, USA, July 4-9, 2011.
20. Program Committee Member, IT for Climate Research Workshop at the 3rd IEEE Intl' Conference on Space Mission Challenges for Information Technology (SMC-IT 2009), Pasadena, CA, July 19 - 23, 2009.
21. Program Committee Member, 18th Intl' WWW Conference (Developer's Track), Madrid, Spain, April 2009.
22. Program Committee Member, 34th Euromicro Conference, Special Session on Software Architecture for Pervasive Systems (SAPS), Parma, Italy, September 2008.
23. Program Committee Member, 2007 ISR Graduate Student Research Symposium, Irvine, CA, June 2007.

**Conference/Workshop Organization**

1. Co-Organizer (with Jens Kump, Robert Downs, and Yolanda Gil) IN23E Benefits and Challenges of Open Source Software and Open Data II at theAmerican Geophysical Union (AGU) Fall 2016 Meeting, San Francisco, December 13, 2016.
2. Co-Organizer (with Jens Kump, Robert Downs) IN13B: Enabling Scientific Analysis, Data Reuse, and Open Science through Free and Open Source Software I at theAmerican Geophysical Union (AGU) Fall 2015 Meeting, San Francisco, December 15, 2015.
3. Co-Organizer (with Jens Kump, Robert Downs and Edzer Pebesma) IN21D. Using Open Source Software to Enable Scientific Analysis and Reuse of Data I and II at the American Geophysical Union (AGU) Fall 2014 Meeting, San Francisco, December 16, 2014.
4. Organizing Committee (Demo Tools Chair), Working IEEE/IFIP Conference on Software Architecture (WICSA), 2014.
5. Co-Organizer (with Jens Klump, Robert Downs and Peter Loewe) N43C. Enabling Science Through Reuse of Data and Free and Open Source Software II at the American Geophysical Union (AGU) Fall 2013 Meeting, San Francisco, December 11, 2013.
6. Co-Organizer (with Karl Benedict) IN32A. Emerging Technologies in Earth and Space Science Informatics (ESSI) I at the American Geophysical Union (AGU) Fall 2013 Meeting, San Francisco, December 11, 2013.
7. Track Chair, Apache in Science, ApacheCon NA 2013, Portland, Oregon, February 26-28, 2012.
8. Session Chair, Session C32 Industrial/Application/Government Track, IEEE Information Reuse and Integration Conference, Las Vegas, NV, August 10, 2012.
9. Organizer, NASA "Mini-Summit" for Open Source Software and Science, 2012 ESIP Federation Summer Meeting, Madison, WI, July 17, 2012.
10. Co-Organizer, NSF EarthCube Workflow Session (with Yolanda Gil and Paul Ramirez), 2012 ESIP Federation Summer Meeting, Madison, WI, July 18, 2012.

11. Planning Team, Open Source Summit organized by NASA, the State Department, and the VA. University of Maryland, Washington D.C., June 20-21, 2012.
12. Co-Organizer (with Bob Downs), IN034. NASA Open Source Summit for Science Data Systems at the American Geophysical Union (AGU) Fall 2012 Meeting, San Francisco, CA, December 3-7, 2012.
13. Co-Organizer, IN30: Software Reuse and Open Source Software in Earth Science Oral Session at the American Geophysical Union (AGU) Fall 2011 Meeting, San Francisco, CA, December 5-9, 2011.
14. Track Chair, Apache in Space! (OODT) Track, ApacheCon NA 2011, Vancouver, CA, November 9, 2011.
15. Session Chair, IEEE IRI Workshop on Issues and Challenges in Social Computing (WICSOC 2011), Las Vegas, NV, August 2, 2011.
16. Lead Organizer, ICSE 2011 Workshop on Software Engineering for Cloud Computing (with Nenad Medvidovic, T. S. Mohan and Owen O'Malley). 33rd Intl' Conference on Software Engineering (ICSE 2011), Honolulu, HI, May 21-28, 2011.
17. Co-Organizer, IN04 Experiences and Challenges in Earth Science Software Reuse Poster Session at the American Geophysical Union (AGU) Fall 2010 Meeting, San Francisco, CA, December 13-17, 2010.
18. Organizer, Chair, 9th NASA Earth Science Data System Working Group Meetings Software Reuse Breakout, New Orleans, Louisiana, October 21-22, 2010.
19. Organizer, Chair, 9th NASA Earth Science Data System Working Group Meetings Open Source Breakout, New Orleans, Louisiana, October 20, 2010.
20. Organizer, NASA Earth Science Data Systems (ESDS) Software Reuse Working Group Workshop on Reuse Readiness Levels. Washington D.C., April 7, 2010.
21. Co-Organizer, IT for Climate Research Workshop at the 3rd IEEE Intl' Conference on Space Mission Challenges for Information Technology (SMC-IT 2009), Pasadena, CA, July 19 - 23, 2009.
22. Webmaster, 2005 Working IFIP/IEEE Conference on Software Architecture (WICSA)

**Advisory Board**

1. Advisory Board, NSF Science Gateways Community Institute, (PI: Nancy Wilkins-Diehr, San Diego Supercomputing Center).
   `http://sciencegateways.org/directory/steering-committee/`
2. Advisory Board, NSF Polar Research Coordination Network, (PI: Shantenu Jha, Rutgers, University).
   `http://polar.crc.nd.edu/`
3. Advisory Board, Wrangler NSF XSEDE Funded Supercomputer, Texas Advanced Supercomputing Center (TACC), (PI: Dr. Niall Gaffney), Austin, TX.
   `https://portal.xsede.org/tacc-wrangler`
4. Advisory Board, IcePod, Lamont-Doherty Earth Observatory (LDEO), Columbia University (PI: Dr. Robin Bell)
   `http://usat.ly/YUhDDo`
   `http://www.ldeo.columbia.edu/res/pi/icepod/`

**Editorial Board**

1. Editorial Board, British Journal of Environment and Climate Change, 2014.
   `http://www.sciencedomain.org/editorial-board-members.php?id=10`

2. Guest Editor, Special issue of IEEE Computer: Computing in Astronomy, 2014.
3. Editorial Board, Journal of Big Data, Springer (JOBD), 2013.
4. Editorial and Advisory Board, Big Data Management, Technologies, and Applications Book, IGI Global, Dr. Wen-Chen Hu, Dr. Naima Kaabouch, Editors, 2013.

**Referee and Reviewer Service**

1. Reviewer, International Conference on Software Architecture (ICSA), formerly WICSA, 2019.
2. Reviewer, International Conference on Software Architecture (ICSA), formerly WICSA, 2018.
3. Reviewer, First International Workshop on Establishing the Community-Wide Infrastructure for Architecture-Based Software Engineering (ECASE'17), 2017.
4. Reviewer, International Conference on Software Architecture (ICSA), formerly WICSA, 2017.
5. Reviewer, Computers & Geosciences, 2017.
6. Reviewer, Astronomy and Computing, 2017.
7. Reviewer, IEEE Software, 2015.
8. Reviewer, ACM Transactions on Software Engineering and Methodology (TOSEM), 2015.
9. Reviewer, XSEDE15: Scientific advancements enabled by enhanced cyberinfrastructure, St. Louis, MO, July 26-30, 2015.
10. Reviewer, American Medical Informatics Symposium (AMIA), San Francisco, CA, November 14-18, 2015.
11. Reviewer, International Journal of Machine Learning and Cybernetics (JMLC), 2014.
12. Reviewer, GeoResJ, (`http://www.journals.elsevier.com/georesj/`), 2014.
13. Reviewer, Remote Sensing (`http://www.mdpi.com/journal/remotesensing`), 2014.
14. Reviewer, ESIP Federation Raskin Scholarship, 2013, 2014.
15. Reviewer, SC: 2nd Workshop on Sustainable Software for Science: Practice and Experiences (WSSSPE), New Orleans, LA, Sunday, November 16, 2014.
16. Reviewer, American Medical Informatics Symposium (AMIA), Washington DC, November 15, 2014.
17. Reviewer, SC: Workshop on Sustainable Software for Science: Practice and Experiences (WSSSPE), 2013, 2014.
18. Reviewer, XSEDE14: Software and Software Environments (Gateways, Bridging, and Application Developers), 2014.
19. Reviewer, IEEE Computer, 2014.
20. Reviewer, Journal of Scientific Programming, 2013.
21. Reviewer, Working IEEE/IFIP Conference on Software Architecture (WICSA), 2006, 2007, 2014, 2015.
22. Reviewer, Springer Journal of Big Data, 2013.
23. Reviewer, ICSR 2013: International Workshop on Designing Reusable Components and Measuring Reusability (DReMeR '13), 2013.
24. Reviewer, XSEDE13: Gateway to Discovery Conference, 2013.
25. Reviewer, Big Data Management, Technologies, and Applications Book, IGI Global, Dr. Wen-Chen Hu, Dr. Naima Kaabouch, Editors, 2013.
26. Reviewer, 9th International Symposium on Management, Engineering and Informatics: MEI 2013.
27. Reviewer, ApacheCon North America, Apache Software Foundation, 2013.

28. Government Reviewer, Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report, 2012.
29. Reviewer, Service-driven Approaches to Architecture and Enterprise Integration Book, 2012.
30. Reviewer, Earth Science Information Partners (ESIP) Federation Data Management Short Course, 2012.
31. Reviewer, Meaningful Use of Complex Medical Data (MUCMD) Symposium, 2011.
32. Reviewer, Earth Science Informatics, 2011, 2013.
33. Reviewer, IEEE Transactions on Education, 2011, 2012.
34. Reviewer, IEEE International Workshop on the Future of Software Engineering for/in the Cloud (FoSEC), 2011.
35. Reviewer, Software Quality Journal, 2011.
36. Reviewer, The Computer Journal, 2011.
37. Reviewer, IEEE Military Communications Conference (MILCOM), 2010.
38. Reviewer, IEEE Transactions on Software Engineering (TSE), 2010, 2011, 2012, 2013.
39. Reviewer, IEEE Intl' Conference on Information Integration and Reuse – Journal Special Issue, 2009.
40. Reviewer, Journal of Software Engineering and Robotics (JOSER), 2009, 2010.
41. Reviewer, Journal of Software and System Modeling (SoSyM), 2009.
42. Reviewer, NASA Earth Science Data System Working Group (ESDSWG) Software Reuse Peer Award, Utilization Category, 2009.
43. Reviewer, IEEE Journal of Selected Topics in Earth Observations and Remote Sensing, 2009, 2010, 2012, 2013, 2014.
44. Reviewer, IEEE Transactions on Dependable and Secure Computing, 2008, 2010.
45. External Reviewer, 23rd IEEE/ACM International Conference on Automated Software Engineering (ASE), 2008.
46. Reviewer, 34th Euromicro Special Session on Software Architecture for Pervasive Systems (SAPS), 2008.
47. Reviewer, Wiley Encyclopedia of Computer Science and Engineering, 2008.
48. Reviewer, Journal of Systems and Software, 2008, 2013.
49. Reviewer, ACM Computing Reviews, 2007-2012
50. Reviewer, IBM Systems Journal, 2007.
51. Reviewer, 2007 ISR Graduate Student Research Symposium, Irvine, CA, June 2007.
52. External Reviewer, 3rd Intl' Conference on the Quality of Software-Architectures, 2007.
53. External Reviewer, 10th Intl' Symposium on Component-based Software Engineering, 2007.
54. External Reviewer, 1st IEEE Intl' Conf. on Self-Adaptive and Self-Organizing Systems, 2007.
55. External Reviewer, ICSE07 SHARK ADI Workshop, 2007.
56. External Reviewer, Journal of Systems and Software Special Section on Software Architecture, 2006.
57. External Reviewer, 9th Intl Symposium on Component-based Software Engineering, 2006.
58. External Reviewer, 3rd Intl Working Conference on Component Deployment, 2005 .
59. External Reviewer, 5th Intl Workshop on Software Engineering and Middleware, 2005.
60. External Reviewer, 9th Intl Software Product Line Conference, 2005.
61. External Reviewer, 8th Intl Symposium on Component-based Software Engineering, 2005.

62. Reviewer, IEEE Software, 2004, 2005.
63. External Reviewer, FSE-12 Workshop On Self-managing Systems (WOSS), 2004.
64. External Reviewer, UML04 Workshop on Software Architecture Description and UML, 2004.
65. External Reviewer, Workshop on Architecting Dependable Systems, 2004.
66. Reviewer, Journal of Autonomous Agents and Multi-agent Systems 2003 , 2011, 2012.

**Other**

1. Proceedings Contributor to DBLP bibliography server (WICSA-4, ICWI2003, IEEE-IRI 2004)

## Advisory

**Completed**

1. National Science Foundation (NSF), Panel Review, May 2025.
2. NASA Small Business Innovation Research/Small Business Technology Transfer (SBIR/SBTT) Phase II Proposal Reviewer, March 2021.
3. NASA Small Business Innovation Research/Small Business Technology Transfer (SBIR/SBTT) Phase II Proposal Reviewer, March 2020.
4. JPL Office of the Chief Scientist & Chief Technologist Topical R&TD review, March 2020.
5. National Science Foundation (NSF), Proposal Review, October 2019.
6. National Science Foundation (NSF), Proposal Review, September 2019.
7. The Fund for Scientific Research FNRS, Brussels, Belgium, September 2019.
8. National Science Foundation (NSF), Proposal Review, June 2019.
9. JPL Office of the Chief Scientist & Chief Technologist Topical R&TD review, May 2019.
10. NASA Small Business Innovation Research/Small Business Technology Transfer (SBIR/SBTT) Phase I Proposal Reviewer, April 2019.
11. National Science Foundation (NSF), Panel Review, April 2019.
12. NASA Jet Propulsion Laboratory (JPL) Data Science Pilot Reviews, FY19, December 2018.
13. JPL Space Technology Office JPL NEXT review, November 2018.
14. National Science Foundation (NSF), Proposal Review, November 2018.
15. JPL Office of the Chief Scientist & Chief Technologist Strategic R&TD review, July 2017.
16. The Fund for Scientific Research FNRS, Brussels, Belgium, May 2017.
17. National Science Foundation (NSF), Panel Review, April 2017.
18. The Fund for Scientific Research FNRS, Brussels, Belgium, April 2017.
19. NASA Jet Propulsion Laboratory (JPL), Summer Undergraduate Research Fellowship (SURF) Review Panel, April 2017.
20. National Aeronautics and Space Administration (NASA), Panel Review, April 2017.
21. National Science Foundation (NSF), Panel Review, August 2016.
22. National Science Foundation (NSF), Panel Review, April 2016.
23. National Science Foundation (NSF), Proposal Review, February 2016.
24. National Science Foundation (NSF), Proposal Review, November 2015.
25. NASA Jet Propulsion Laboratory (JPL), Spontaneous Concept R&TD proposal review, November 2015.
26. The Fund for Scientific Research FNRS, Brussels, Belgium, October 2015.

27. National Institutes of Health (NIH), National Institute's of Allergies and Infectious Disease (NIAID), Microbiology and Infectious Diseases Biological Research Repository (MID-BRR), September 2015.
28. National Science Foundation (NSF), Proposal Review, June 2015.
29. National Science Foundation (NSF), Proposal Review, June 2015.
30. NASA Jet Propulsion Laboratory (JPL), Topic Area R&TD proposal review, June 2015.
31. National Science Foundation (NSF), Panel Review, March 2015.
32. National Science Foundation (NSF), Proposal Review, January 2015.
33. National Science Foundation (NSF), Proposal Review, November 2014.
34. The Fund for Scientific Research FNRS, Brussels, Belgium, October, 2014.
35. National Science Foundation (NSF), Panel Review, June 2014.
36. National Science Foundation (NSF), Proposal Review, June 2014.
37. The Fund for Scientific Research FNRS, Brussels, Belgium, May 2014.
38. National Science Foundation (NSF), Proposal Review, May 2014.
39. National Science Foundation (NSF), Panel Review, May 2014.
40. National Science Foundation (NSF), Site Visit, May 2014.
41. National Science Foundation (NSF), Panel Review, March 2014.
42. National Science Foundation (NSF), Proposal Review, March 2014.
43. National Science Foundation (NSF), Panel Review, February 2014.
44. The Fund for Scientific Research FNRS, Brussels, Belgium, September 2013.
45. National Institutes of Health (NIH), National Institute's of Allergies and Infectious Disease (NIAID) Centers of Excellence in Translational Research (CETR) Panel, August 2013.
46. National Science Foundation (NSF), Proposal Review, July 2013.
47. National Science Foundation (NSF), Site Visit Team, June 2013.
48. National Science Foundation (NSF), Panel Review, May 2013.
49. National Science Foundation (NSF), Panel Review, April 2013.
50. NASA Small Business Innovation Research/Small Business Technology Transfer (SBIR/SBTT) Phase I Proposal Reviewer, October 2011.
51. NASA Small Business Innovation Research/Small Business Technology Transfer (SBIR/SBTT) Phase I Proposal Reviewer, October 2010.
52. Defense Advanced Research Projects Agency (DARPA), Digital Object and Storage Retrieval (DOSR) program, 2008-2010.
53. National Institutes of Health (NIH), National Institute's of Allergies and Infectious Disease (NIAID) Microbiology and Infectious Diseases Biological Resource Repository (BRR) Proposal Review Panel, 2009.
54. NASA Small Business Innovation Research/Small Business Technology Transfer (SBIR/SBTT) Phase I Proposal Reviewer, October 2009.
55. National Science Foundation (NSF), Panel Review, June, 2009.
56. NASA Jet Propulsion Laboratory (JPL), Strategic University Partnership (SURP) Program Proposal Review Panel, 2009.
57. National Institutes of Health (NIH), National Institute's of Allergies and Infectious Disease (NIAID) Adjuvant Development Program Proposal Review Panel, 2008.
58. National Institutes of Health (NIH), National Institute's of Allergies and Infectious Disease (NIAID) DMID Regulatory Affairs Support Proposal Review Panel, 2008.

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| Professional Associations | Board Member, and CFO/Treasurer, La Canada Football Foundation<br>Executive Board Member (Asst. Treasurer), La Canada Gladiators Youth Football<br>Senior Member, Institute of Electrical and Electronics Engineers, Inc. (IEEE)<br>Member, ACM Special Interest Group on Information Retrieval (SIGIR)<br>Member, American Astronomical Society (AAS)<br>Member, Foundation for Earth Science (ESIP)<br>Member, IEEE Geoscience and Remote Sensing Society (GRSS-IEEE)<br>Member, Apache Software Foundation (ASF)<br>Member, Open Geospatial Consortium (Voting Member, Geo API WG)<br>Member, ACM Special Interest Group on Software Engineering (SIGSOFT)<br>Participant (via JPL), Consultative Committee on Space Data Systems (CCSDS) |

Computer Skills

- Languages: Java, C/C++, Perl, Python, SQL, XML, HTML, JavaScript, VBScript, ASP, JSP, PHP
- Applications: LaTeX, common Windows database, spreadsheet, and presentation software, Adobe Photoshop, Adobe Framemaker, Git, Subversion, CVS, ViewVC, JIRA, Confluence, Maven, Ant, Junit
- Operating Systems: Windows, Solaris, Unix (particular experience with FreeBSD), Linux (experience with RedHat).

References — Available upon Request

Clearance — TS-SCI (Single Scope, with Poly)

Citizenship — United States Citizen