

Chris Mattmann, Ph.D.

CONTACT INFORMATION

Chief Data & Artificial Intelligence Officer (CDAIO)

UCLA Information Technology Services (ITS)
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

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/chris mattmann / disco>

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

B.S., Computer Science, December 2001

PROFESSIONAL EXPERIENCE

UCLA Information Technology Services (ITS), 10920 Wilshire Boulevard Suite 1100, Los Angeles, California 90024

Chief Data & Artificial Intelligence Officer (CDAIO)

June 2024 - present

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.

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.

Information Technology and Solutions Directorate (ITSD), NASA Jet Propulsion Laboratory, Pasadena, CA 91109 USA

| | |
|---|--|
| <i>Chief Technology & Innovation Officer (CTIO)</i> | February 2021 - June 2024 |
| <i>Division Manager, Artificial Intelligence, Analytics, and Innovation Organization,</i> | May 2020-June 2024 |
| <i>Manager, Chief Technology & Innovation Office,</i> | April 2020-May2020 |
| <i>Deputy Chief Technology & Innovation Officer (CTIO)</i> | September 2019 - April 2020 |
| <i>Associate Chief Technology & Innovation Officer (CTIO)</i> | January 2018 - September 2019 |
| <i>Manager, Technology User Evaluation and Infusion Office</i> | November 2018 - September 2019 |
| <i>Manager, IT Advanced Research and Open Source Office</i> | January 2018 - September 2019 |
| <i>Manager, NSF Program Office</i> | January 2017 - present |
| <i>Principal Data Scientist, Engineering Administrative Office</i> | October 2016 - January 2018 |
| <i>Manager, Open Source Projects Formulation and Development Office</i> | August 2016 - September 2019 |
| <i>Principal Designation (Data Science)</i> | January 2015 - present |
| <i>Chief Architect</i> | January 2014 - October 2016 |
| <i>Software Architect V</i> | September 2013 - September 2019 |
| <i>Software Architect IV</i> | September 2011 - September 2013 |
| <i>Senior Computer Scientist</i> | September 2008 - December 2014 |
| <i>Cognizant Development Engineer</i> | August 2007 - September 2019 |
| <i>Member of Key Staff</i> | September 2006 - September 2019 |
| <i>Staff Software Engineer</i> | September 2005 - September 2008 |
| <i>Associate Software Engineer</i> | January 2001 - August 2005 |

At JPL I am the Division Manager, Artificial Intelligence, Analytics, and Innovation Organization in the Information Technology and Solutions Directorate (ITSD). I manage 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 manage formulation and development of strategic non-NASA and NSF open source projects with a focus on agile software development process. My organization focuses 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 17 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 \$80+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.

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

Adjunct Research Professor

April 2021 - present

Director, Information Retrieval & Data Science Group

November 2015 - present

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.

Joint Institute for Regional Earth System Science and Engineering, UCLA, Los Angeles, CA 90095 USA

Associate Project Scientist III

July 2019 - present

Associate Project Scientist

October 2015 - July 2019

Visiting Researcher

March 2012 - October 2015

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.

Earth Science Data System (ESDS) Working Groups, National Aeronautics and Space Administration, 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

| | |
|--|-----------------------------------|
| <i>Director, Apache Software Foundation</i> | May 2013 - March 2018 |
| <i>Treasurer (Executive Officer), Apache Software Foundation</i> | August 2012 - May 2016 |
| <i>Member, Apache Software Foundation</i> | March 2010 - present |
| <i>VP, Apache OODT, OODT Project</i> | November 2010 - March 2013 |
| <i>VP, Apache Tika, Tika Project</i> | April 2010 - August 2012 |
| <i>Project Management Committee, Gora Project</i> | January 2012 - present |
| <i>Project Management Committee, Incubator Project</i> | April 2010 - present |
| <i>Project Management Committee, Nutch Project</i> | April 2010 - present |
| <i>Project Management Committee, Tika Project</i> | April 2010 - present |
| <i>Project Management Committee, Lucene Project</i> | October 2009 - May 2010 |
| <i>Committer and Co-Founder, Tika project</i> | March 2007 - present |
| <i>Committer, Nutch project</i> | October 2006 - present |

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 ParserFactory, Metadata container support, and an automatically 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.

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

| | |
|---------------------------------|------------------------------------|
| <i>Chief Research Officer</i> | October 2016 - present |
| <i>Chief Technology Officer</i> | August 2013 - December 2014 |
| <i>Architect</i> | January 2012 - August 2013 |
| <i>Independent Consultant</i> | 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.

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

| | |
|-----------------------------------|-------------------------------------|
| <i>Senior Software Consultant</i> | 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>.

Engineering Team, Iwin.com, Inc, 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 AND
AWARDS**

SCI Journal Top 16 Famous Data Scientists That You Should Know, 2024.

<https://www.scijournal.org/articles/famous-data-scientists>

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 Research Professor

April 2021 - present

Director, Information Retrieval & Data Science Group

November 2015 - present

Adjunct Associate Professor

November 2013 - March 2021

Adjunct Assistant Professor

November 2008 - November 2013

Part-time Faculty

November 2007 - November 2008

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 participant 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 - present

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. INF 550: Data Science at Scale - University of Southern California

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 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/impurities 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

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-mattmann>
2. AIT News Desk. Seven Bridges Announces Strategic Advisory Board Appointments. *AI Technology Insights*. Mar 4, 2021.
<https://aithority.com/technology/life-sciences/seven-bridges-announces-strategic-advisory-board>
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-Board-of-Advisors>
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-director-s-home-to-protest-covid-19-restrictions>
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-us-in-december-2019-before-china-ever-acknowledged-it-publicly>
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>
9. A. Nivision. Media reacts to latest AP Top 25 poll. *247 Sports*. Oct 11, 2020.
https://247sports.com/LongFormArticle/AP-Top-25-poll-Week-7-reaction-UNC-Florida-Texas-A&hpid=hp_top25%3Astory%3Ahomepage%2Ftexas
10. J. A. Wulfsohn. Twitter users sound alarm over warning about retweeting headlines that don't tell the full story. *Fox News*, October 2, 2020.
<https://www.foxnews.com/media/twitter-warning-retweeting-headlines>
11. Will More Powerful Processes Super-Charge NASA's Mars Rovers? *Sashdot*, August 22, 2020.
<https://science.slashdot.org/story/20/08/22/2025231/will-more-powerful-processors-super-charge-nasa-s-mars-rovers>

12. A. Dubrow. Deep Learning will Help Future Mars Rovers Go Farther, Faster, and Do More Science. *Texas Advanced Computing Center*, August 19, 2020.
<https://www.tacc.utexas.edu/-/deep-learning-will-help-future-mars-rovers-go-farther-fas>
13. B. Welk. Kelly Preston Remembered by John Travolta, Russell Crowe and More: ‘Sparkly Eyed Gem’. July 13, 2020
<https://www.thewrap.com/kelly-preston-remembered-tributes/>
14. C. Mims. AI Isn’t Magical and Won’t Help You Reopen Your Business. *Wall Street Journal*, May 30, 2020.
<https://www.wsj.com/articles/ai-isnt-magical-and-wont-help-you-reopen-your-business-115>
15. NASA JPL Team Fires up Open Source PPE Respirator Designs. *MeriTalk*, May 29, 2020.
<https://www.meritalk.com/articles/nasa-jpl-team-fires-up-open-source-ppe-respirator-des>
16. D. Liu. Huge meteor explosion over Earth last year went unnoticed until now. *New Scientist*, March 15, 2019.
<https://www.newscientist.com/article/2196702-huge-meteor-explosion-over-earth-last-year>
17. D. Liu. AI has helped rescue children trafficked for sexual exploitation. *New Scientist*, February 12, 2019.
<https://www.newscientist.com/article/2193727-ai-has-helped-rescue-children-trafficked-f>
18. C. Mattmann. An Update From the Trenches: Where Are We With Cloud Computing and Its Deployment? *Epoch Times*, January 29, 2019.
<https://www.theepochtimes.com/an-update-from-the-trenches-where-are-we-with-cloud-compu>
2780103.html
19. C. Mattmann. Using Technology to Separate Fact From Fiction in Online Media. *Epoch Times*, January 27, 2019.
<https://www.theepochtimes.com/using-technology-to-separate-fact-from-fiction-in-online->
2777696.html
20. C. Mattmann. Protecting Space with a Bold Cybersecurity Portfolio and Strategy. *Epoch Times*, January 18, 2019.
<https://www.theepochtimes.com/protecting-space-with-a-bold-cyber-security-portfolio-and>
2766583.html
21. C. Mattmann. Key Technological Accomplishments by the Current Administration Over the Past 2 Years. *Epoch Times*, January 17, 2019.
<https://www.theepochtimes.com/key-technological-accomplishments-by-the-current-administ>
2766227.html
22. C. Mattmann. Making Our Galactic Deep-Space Network a National Priority for Mars and Beyond. *Epoch Times*, November 28, 2018.
<https://www.theepochtimes.com/making-our-galactic-deep-space-network-a-national-priorit>
2724802.html
23. C. Mattmann. A Bold Vision for Mars and the Moon Will Yield Big Technology Advancements. *Epoch Times*, November 6, 2018.
<https://www.theepochtimes.com/a-bold-vision-for-mars-and-the-moon-will-yield-big-techn>
2708653.html
24. A. Invision. Media questions Clay Helton’s job security after loss to ASU. *USC Football.com*, October 28, 2018.
<https://247sports.com/college/usc/LongFormArticle/USC-Arizona-State-2018-Media-question>
25. C. Dawson. Data-Crunching Class Looks to the Skies to Explore UFO Sightings. *USC Viterbi School of Engineering*.
<https://goo.gl/WE479Q>, July 2, 2018.
<https://news.usc.edu/145307/looking-toward-the-sky-trojans-explore-ufo-sightings/>

26. J. Phillip. Creation of Space Force Necessary to Counter Developing Threats. *The Epoch Times*. June 19, 2018.
<https://www.theepochtimes.com/creation-of-space-force-necessary-to-counter-developing-t-2568352.html>
27. E. Murgese. I work at NASA surrounded by extraordinary scientists. And to think that everything was born of a Commodore 64. *IlFattoQuotidiano.it*, June 18, 2018.
<https://goo.gl/im8cso>
28. W. Mills. Orvium – Roadmap and Action Plan Review. *steemit.com*. Wednesday, May 16, 2018.
<https://steemit.com/blockchain/@westonmills/orvium-roadmap-and-action-plan-review>
29. R. Fontana. Top 10 open source legal stories that shook 2017. *Opensource.com*. February 27, 2018.
<https://opensource.com/article/18/2/top-10-open-source-legal-stories-shook-2017>
30. G. Motroc. Facebook to relicense React, Jest, Flow, and Immutable.js under MIT license. *JAXEnter*, September 25, 2017.
<https://jaxenter.com/facebook-bsd-patents-react-relicense-135705.html>
31. S. Nichols. Apache says ‘no’ to Facebook code libraries Anti-patent-lawsuit restrictions land tools on banned list. *The Register - UK*, July 17, 2017.
https://www.theregister.co.uk/2017/07/17/apache_says_no_to_facebook_code_libraries
32. G. Motroc. Apache Foundation recommends against using Facebook BSD+patents licensed artifacts. *JAXEnter*, July 17, 2017.
<https://s.apache.org/APy5>
33. C. Nash, and E. Dulis. CNN, Andrew Kaczynski Mislead in Defense of ‘Doxing Threat’. *Brietbart News*. July 5, 2017.
<https://goo.gl/wsRj9M>
34. P. Hasson. Politics: ‘Extremely Unethical’ ? CNN Draws Backlash After Threatening To ID Reddit User Behind Trump’s WWE Video. *Daily Caller*. July 4, 2017.
<https://goo.gl/cSFKGd>
35. A. Athey. Politics: CNN Responds To Claims They Staged A Muslim Anti-Terror Protest. *Daily Caller*. June 5 2017.
<https://goo.gl/H1BtfI>
36. T. Barber. Success at Apache: Meritocracy and Me. 1 May 2017.
<https://blogs.apache.org/foundation/entry/success-at-apache-meritocracy-and>
37. The Apache Software Foundation Announces Apache® cTAKES™ v4.0. 25 April 2017.
<https://blogs.apache.org/foundation/entry/the-apache-software-foundation-announces8>
<http://finance.yahoo.com/news/apache-software-foundation-announces-apache-100000142.html>
38. The Apache News Round-Up: Week ending 31 March 2017.
<https://blogs.apache.org/foundation/date/20170331>
39. R. Ritjano. “I, the NASA Scientist, will look into the Deep, Dark Web.” *la Repubblica*, Jan 31, 2017.
<https://goo.gl/zXnxjq>
40. J. Salazar. When Data’s Deep, Dark Places Need to be Illuminated. *Texas Advanced super-Computing Center (TACC) Web Feature*. Published Jan 26, 2017.
<https://www.tacc.utexas.edu/-/when-data-s-deep-dark-places-need-to-be-illuminated>
41. C. Mattmann. Searching deep and dark: Building a Google for the less visible parts of the web. *The Conversation*. January 8, 2017.
<https://goo.gl/42qAU1>
Article read by over 115,846 people over the world

Article republished in *Daily Mail*, *Live Science*, *Salon*, *IFLScience*, *Pys.org*, *SFGate*, *Houston Chronicle*, *EconoTimes*, *Albany Times-Union*, *Seattle Post-Intelligencer* among other outlets.

42. J. Philipp. 'Fake News' Crackdown Spreads Around the World. *The Epoch Times*. January 5, 2017.
<http://www.theepochtimes.com/n3/2206375-fake-news-crackdown-spreads-around-the-world>
43. Dell/EMC. "Texas Advanced Computing Center (TACC) inspires innovation with next-gen analytics". Jan 1, 2017.
<https://goo.gl/ODMnTZ>
44. J. Philipp. Internet Reaches Crossroads on Free Speech. *The Epoch Times*. November 24, 2016.
<http://www.theepochtimes.com/n3/2189298-internet-reaches-crossroads-on-free-speech-2>
45. Announcing changes in ASF Executive Leadership. October 21, 2016.
https://blogs.apache.org/foundation/entry/announcing_changes_in_asf_executive
46. NASA and Baidu to lead exploration of big data and business in Melbourne. September 22, 2016.
<https://goo.gl/UuU0cE>
47. The Apache Software Foundation Announces Apache Kudu™ v1.0. September 20, 2016.
https://blogs.apache.org/foundation/entry/the_apache_software_foundation_announces100
48. J. Philipp. China Could Control the Global Internet After Oct. 1. *The Epoch Times*. September 14, 2016.
<http://bit.ly/2ctB8x1>
49. The Apache Software Foundation Announces Apache™ Mesos v1.0. July 27, 2016.
https://blogs.apache.org/foundation/entry/the_apache_software_foundation_announces97
<http://finance.yahoo.com/news/apache-software-foundation-announces-apache-100000615.html>
50. K. Sinaris. Apache Bahir against a "Wild West" of Big Data Projects. *JAXEnter*. July 7, 2016.
<https://jaxenter.com/apache-bahir-chris-mattmann-interview-127514.html>
51. J. Haube. An inside look at how NASA is using AI to drive efficiency for data analysis. Interview with C. Mattmann. *Artificial Intelligence for the Enterprise 2016*. July 3, 2016.
<http://bit.ly/29gC6gJ>
52. S. Dean. Bahir is the Latest Big Data Project to Advance at Apache. *OStatic*. June 29, 2016.
<http://ostatic.com/blog/bahir-is-the-latest-big-data-project-to-advance-at-apache>
53. The Apache Software Foundation Announces Apache™ OODT™ v1.0. June 29, 2016.
<http://bit.ly/294JucQ>
54. The Apache Software Foundation Announces Apache™ Bahirt™ as a Top-Level Project. June 29, 2016.
<http://bit.ly/290Ap2l>
55. U. Bantle. Positive annual report of the Apache Software Foundation. *Linux Magazine - Germany*, June 10, 2016.
56. H. Augur. Not just for Earthlings: NASA has Big Uses for Big Data. *Dataconomy*, April 1, 2016.
<http://dataconomy.com/not-just-for-earthlings-nasa-has-big-uses-for-big-data/>
57. Joaquin P. Yage. NASA is involved in the search Memex. *eldiario.es*, February 26, 2016.
<http://tinyurl.com/hvkkyl7>
58. DS Examiner. Data Science with the Stars: An Interview with NASA's Chris Mattmann. *Masters in Data Science*, February 9, 2016.
<http://www.mastersindatascience.org/blog/data-science-at-nasa/>

59. S. Hall. Apache Sets Out On a Geospatial Voyage. *The New Stack*. January 22, 2016.
<http://thenewstack.io/apache-sets-geospatial-voyage/>
60. Viterbi - India Program. *Indo-US Science and Technology Forum (IUSSTF)*. January 2016.
<http://www.iusstf.org/cms/newsimages/file/viterbi/Web%20Announcement.pdf>
61. B. Moore. How DARPA Uses Data Science to Combat Human Trafficking. *Galvanize*. September 16, 2016.
<http://bit.ly/1PNHenV>
62. SoIC News: Master of Information Science Interns at NASA. *Indiana University: School of Informatics and Computing*. September 28, 2015.
<http://bit.ly/1JCJWr6>
63. J. Furseth. Diving Into The Deep Web. *100 TB Blog*, August, 2015.
<http://www.100tb.com/blog/2015/08/diving-into-the-deep-web/>
64. Deep Web search to help decode space data. *Daily News.lk*. July 11, 2015.
<http://www.dailynews.lk/?q=world/deep-web-search-help-decode-space-data>
65. J. Rice and L. Lopez. Finding a Better Way to Search the Whole Internet. *NBC Los Angeles Channel 4*. July 8, 2015.
<http://bit.ly/1MgD9qD>
66. D. Bates. Is web security putting us in DANGER? Criminals and terrorists will communicate with impunity if encryption becomes too sophisticated, FBI warns. *Daily Mail - UK*. July 7, 2015.
<http://dailym.ai/1NPskw3>
67. E. Burns. Spark Big Data Framework Powers Speedy Analytics. *Tech Target*. June 24, 2015.
<http://goo.gl/iQNk48>
68. J. Philipp. DARPA is Creating a New Internet, Based Around Search. *The Epoch Times*. June 23, 2015.
<http://goo.gl/au6CfL>
69. B. K. Tarafondan. NASA Deep Web will be Indexes. *WebTekno.com*. June 21, 2015.
<http://www.webtekno.com/internet/nasa-darpa-memex-projesi-h8539.html>
70. L. Thodoris. Memex: the lens of the Dark Web. *Tovima (Greece) Science*. June 14, 2015.
<http://www.tovima.gr/science/article/?aid=712905>
71. D. Weiner-Bronner. Search Better: NASA is indexing the Deep Web to show mankind what Google wont. *ABC/Univision Fusion*. June 10, 2015.
<http://goo.gl/jXai2l>
72. Deep Web Search May Help Scientists. *SpaceRef*. June 10, 2015.
<http://spaceref.com/news/viewpr.html?pid=46065>
73. NASA, DARPA collaborating on Deep Web search to analyze spacecraft data. *Digi III*. March 30, 2015.
<http://goo.gl/MjVuVo>
74. Deep Web Search May Help Scientists. *Open Science World*. May 28, 2015.
<http://openscienceworld.com/deep-web-search-may-help-scientists/>
75. J. Gibson. NASAs Jet Propulsion Laboratory joins DARPA for Memex Project. *Perfect Science*. May 27, 2015.
<http://goo.gl/JLvOD0>
76. R. Chirgwin. JPL joins DARPA's Memex project: Better search and indexing for space stuff. *The Register - UK*. May 27, 2015.
http://www.theregister.co.uk/2015/05/27/jpl_joins_darpas_memex_project/

77. C. Wood. NASA looks to DARPA's deep web search technology for future spacecraft data analysis. *Gizmag*. May 26, 2015.
<http://www.gizmag.com/nasa-deep-web-spacecraft-data-analysis/37694/>
78. J. Wolman. Knee-deep in data. *The Positive*. May 27, 2015.
<http://thepositive.com/knee-deep-in-data/>
79. Scientists will benefit more from Deep Web Searches. *GreenAtom*. May 26, 2015.
<http://goo.gl/UqDJAN>
80. J. Lendino. NASA, DARPA collaborating on Deep Web search to analyze spacecraft data. *ExtremeTech*. May 26, 2015.
<http://goo.gl/iRAFXC>
81. NASA to put science face on scary DARPA project. *TRTWorld.com*. May 26, 2015.
<http://goo.gl/HJPv50>
82. M. Prigg. Nasa joins US government project to create 'Google for the dark net' that could uncover cyber criminals, paedophiles and drug dealers in the online underworld. *Daily Mail - UK*. May 25, 2015.
<http://goo.gl/xMj2hH>
83. NASA/Jet Propulsion Laboratory. "Deep web search may help scientists." *ScienceDaily*. May 23, 2015.
www.sciencedaily.com/releases/2015/05/150523100942.htm
84. E. Landau. Deep Web Search May Help Scientists. *NASA Jet Propulsion Laboratory*. Web Feature. May 22, 2015.
<http://www.jpl.nasa.gov/news/news.php?feature=4595>
<http://www.nasa.gov/jpl/deep-web-search-may-help-scientists>
85. Kitware Participates in DARPA Memex Program, Developing Software to Address Complex Search Problems. *PR News*, May 23, 2015.
<http://www.prweb.com/releases/2015/05/prweb12741017.htm>
86. D. Khan. ApacheCon North America 2015 and supporting open source. *Semantic Analyzer Language Intelligence*. May 1, 2015.
<http://goo.gl/FJiFXV>
87. The Apache Software Foundation Announces ApacheTM ParquetTM as a Top-Level Project. April 27, 2015.
<http://bit.ly/1GAEo4A>
88. J. Iversen. NASA's Chris Mattmann on Apache technology. *Opensource.com*, April 8, 2015.
<http://opensource.com/life/15/4/interview-chris-mattmann-nasa-jpl>
89. J. Steimle. Drowning in Big Data - Finding Insight in a Digital Sea of Information. *Forbes*. March 25, 2015.
<http://goo.gl/KKYJyF>
90. Scientific Relevancy in Web Search: Polar scientific queries solicited from the cryo-community. *Climate Cryosphere*, March 17, 2015.
<http://www.climate-cryosphere.org/news/partner-news/1384-relevancy-websearch>
91. P. Boynton. Car Keys and Nuclear Keys: Big Data and the Internet of Things. *NextGov*, February 27, 2015.
<http://goo.gl/0eT4dy>
92. The Apache Software Foundation Celebrates 15 Years of Open Source Innovation and Community Leadership. November 19, 2014.
https://blogs.apache.org/foundation/entry/the_apache_software_foundation_celebrates2

93. Media Alert - November 3-4, 2014: NSF Polar CyberInfrastructure DataVis Hackathon in New York, NY. Contact: USC Viterbi Media Relations - 213-821-5555 or vcomms@usc.edu. October 31, 2014.
<http://goo.gl/dmf7gt>
94. NSF DataViz Hackathon for Polar CyberInfrastructure - Call for Remote Participation. *ESIP Federation Blog*. November 2, 2014.
<http://esipfed.org/node/7305>
95. Scientists seek new ways for dealing with Big Data. (German). *Computerwoche.de*. October 7, 2014.
<http://goo.gl/R6jlhA>
96. J. Duley. Open Innovation Team releases new CODE.nasa.gov. *Open NASA Blog*. October 6, 2014.
<http://go.usa.gov/w4AR>
97. Researchers are looking for new ways of dealing with Large Amounts of Data. *NWZ Online*. October 7, 2014. (German).
<http://goo.gl/ippyRD>
98. 3rd International Symposium on Big Data KIT. *Gau-Allianz*, Newsletter No. 29, September 2014. (German)
<http://www.gauss-allianz.net/de/infobrief/430-infobrief-nr-29>
99. The Apache Software Foundation Announces ApacheTM TezTM as a Top-Level Project. *Global News Wire*. Tuesday, July 22, 2014.
<http://goo.gl/aY91j5>
100. J. Vaughan. Apache Spark goes 1.0, looks to improve on MapReduce performance. *Search Data Management*. Wednesday, June 4, 2014.
<http://bit.ly/1kuK2u8>
101. J. LeClaire. Can Super-Fast Apache Spark Light Up Hadoop?. *Top Tech News*, Friday May 30, 2014.
http://www.toptechnews.com/article/index.php?story_id=13200AZBZ75C
102. The Apache Software Foundation Announces ApacheTM SparkTM v1.0. *Yahoo! Finance*, Friday May 30, 2014.
<http://goo.gl/sCioLM>
103. Apache Tajo Granted Top-Level Project Status by the ASF. *Gruter Blog*, April 1, 2014.
<http://www.gruter.com/blog/?p=839>
104. C. Mulligan. Spark advances from Apache Incubator to top-level project. *SDTimes*, February 28, 2014.
<http://www.sdtimes.com/content/article.aspx?ArticleID=68845&page=1>
<http://buswk.co/NEIIXd>
105. P. Rubens, 7 Reasons Not to Use Open Source Software. *CIO magazine*, February 11, 2014.
http://www.cio.com.au/article/537990/7_reasons_use_open_source_software/
106. M. Gannon. How Scientists Tackle NASA's Big Data Deluge. *Space.com*, January 18, 2014.
<http://www.space.com/23330-nasa-big-data-jet-propulsion-laboratory.html>
http://www.huffingtonpost.com/2014/01/21/nasa-big-data-deluge_n_4636667.html
107. N. Bharti. QCon London '14: Damian Conway, Tim Lister, Gunter Dueck Keynotes, 45% Speakers Confirmed (Mar 3-7). *InfoQ*, December 4, 2013.
<http://www.infoq.com/news/2013/12/qcon-london-2014>
108. K. Hickey. NASA's virtual institute powers solar system exploration. *GCN: Technology, Tools and Tactics for Public Sector IT*. December 5, 2013.
<http://gcn.com/Articles/2013/12/05/NASA-virtual-institute.aspx>

109. J. Bertolucci. How NASA Manages Big Data. *InformationWeek*. November 21, 2013.
<http://goo.gl/bquF7h>
110. XDATA Tackles the Big Data Challenge. *JPL Science and Technology Website*, November 21, 2013.
<http://scienceandtechnology.jpl.nasa.gov/newsandevents/newsdetails/?NewsID=2443>
111. P. Fiorenza. Are You Ready to Be the Agency of the Future? GovLoop's Latest Report Explores Open Source Technology. *GovLoop*, November 14, 2013.
<http://goo.gl/R6dBsW>
112. A. Poulisse. JPL Researchers developing ways to handle big data. *Pasadena Star News* and *Los Angeles Daily News*, Saturday, November 2, 2013.
<http://bit.ly/1iDxE1B>
113. W. Clavin. Managing the Deluge of 'Big Data' From Space - NASA Jet Propulsion Laboratory. *NASA JPL / NASA Technology Website*. Thursday October 17, 2013.
<http://www.jpl.nasa.gov/news/news.php?release=2013-299>
http://www.nasa.gov/mission_pages/spitzer/news/spitzer20131017.html#.UmCil2RARFh
114. J. Ouellette. Data Driven: the new Big Science. The Future Fabric of Data Analysis. *Quanta Magazine*. The Simons Foundation. October 9, 2013.
<https://www.simonsfoundation.org/quanta/20131009-the-future-fabric-of-data-analysis/>
<http://www.wired.com/wiredscience/2013/10/computers-big-data/>
115. T. Lin. Data Driven: the new Big Science. Imagining Data Without Division. *Quanta Magazine*. The Simons Foundation. September 30, 2013.
<https://www.simonsfoundation.org/quanta/20130930-imagining-data-without-division/>
<http://cacm.acm.org/careers/168401-imagining-data-without-division/fulltext>
<http://www.wired.com/wiredscience/2013/10/big-data-science/>
116. M. Deutscher. Forget Math PhDs Predictive Analysts Replace Old Roles, Push New Markets. *SiliconANGLE*, March 27, 2013.
<http://bit.ly/YT4hlM>
117. C. Goranson. HealthBoard: Moving Towards the Apache 2.0 License. *Open Source Electronic Health Record Agent (OSHERA) Blog*, March 3, 2013.
<http://www.osehra.org/blog/healthboard-moving-towards-apache-20-license>
118. D. Coutler. SERVIR-Himalaya hosts training on assessing water availability and flooding potential in Hindu Kush Himalaya. *NASA SERVIR News*, December 10, 2012.
<http://servirglobal.net>
<http://goo.gl/9yMeY>
119. W. Grace. Big data out in space. *Open Search News*, November 15, 2012.
<http://opensearchnews.com/2012/11/big-data-out-in-space/>
120. S. Putt. Big data the NASA way. *PC Advisor*, Tuesday, October 30, 2012.
<http://www.pcadvisor.co.uk/news/small-business/3408107/big-data-nasa-way/>
121. S. Putt. Big data the NASA way. *Computerworld NZ*, Wednesday October 31, 2012.
<http://computerworld.co.nz/news.nsf/news/big-data-the-nasa-way>
122. Fairfax Magazine. NASA and Sesame Street meet at ITEX 2012. Monday, October 29, 2012.
<http://goo.gl/N4skm>
123. R. Bruecker. Chris Mattmann to Keynote HPC User Forum in Dearborn. *Inside HPC.com*. August 24, 2012.
<http://goo.gl/RxTiX>
124. D. Perera. NASA needs open source framework. *Fierce Government IT*. June 25, 2012.
<http://bit.ly/Q6DgbQ>

125. P. Krill. Hadoop becomes critical cog in the Big Data Machine. *Computerworld*. June 19, 2012.
<http://goo.gl/5E7m0>
126. J. Casaretto. NASA Talks About Big Data, Hadoop. *Silicon Angle Blog*, June 14, 2012.
<http://siliconangle.com/blog/2012/06/14/nasa-talks-about-big-data-hadoop/>
127. N. Skytland, A. Liewellyn, S. Herron. NASA Open Government Plan 2.0. NASA, 2012.
<http://www.scribd.com/doc/88733284/NASA-Final-Open-Government-Plan-Version-2-0>
<http://open.nasa.gov/plan/>
<http://open.nasa.gov/plan/open-source-software/>
128. NASA Spinoff Magazine. Frameworks Coordinate Scientific Data Management. *NASA Spinoff Magazine*, 2011.
<http://t.co/6A17FK4N>
129. A. Howard. Open Source is Mission Critical for NASA. *O'Reilly Radar*, 2011.
<http://radar.oreilly.com/2011/04/nasa-open-source.html>
130. B. Ahier. Pediatric Health IT, a Space Odyssey. *Government Health IT*, June 27, 2010.
<http://www.govhealthit.com/news/pediatric-health-it-space-odyssey>
131. A. Howard. NASA Technology leads to better Medical Decisions. *O'Reilly Radar*, 2010.
<http://radar.oreilly.com/2010/06/harnessing-open-source-grid-so.html>

Podcasts

1. C. Mattmann. "AI for Exponential Business - Host: Dr. Lobna Karoui, Executive AI Strategy Growth Advisor / Guest: Dr. Chris Mattmann, AI Director in Jet Propulsion Laboratory at NASA". *AI for Exponential Business*, Dec 26, 2020.
<https://www.listennotes.com/podcasts/ai-exponential/ai-for-exponential-business-paz37Ui>
2. C. Mattmann. "Trojans: Wired – Chris Mattmann and data science in college football". *USA Today*, Dec 8, 2020.
<https://trojanswire.usatoday.com/2020/12/08/trojans-wired-chris-mattmann-and-data-scienc>
3. C. Mattmann. "Ep 85 — Technology Advances Enable Artificial Intelligence Machine Learning Beyond One's Imagination". *The Rob Maness Show*. Nov 12, 2020.
<https://www.robmaness.com/video/2020/11/ep-85-technology-advances-enable-artificial-int>
4. C. Mattmann. "Space AI: The Final Frontier?". *Data Robot - AI Podcast - More Intelligent Tomorrow*. October 30, 2020.
<https://www.datarobot.com/ai-heroes/podcasts/chris-mattmann/>
5. C. Mattmann. "Guest: Dr. Chris Mattmann - Rocket Scientist, AI and Analytics at NASA Jet Propulsion Laboratory." *Unafraid Show: Am I Wrightster or wrong?*. Interviewed by George Wrightster III. October 28, 2020.
<https://unafraidshow.com/tag/dr-chris-mattmann/>
[https://podcasts.apple.com/us/podcast/guest-dr-chris-mattmann-rocket-scientist-ai-analy](https://podcasts.apple.com/us/podcast/guest-dr-chris-mattmann-rocket-scientist-ai-analy/id1434205566?i=1000496248787)
[id1434205566?i=1000496248787](https://podcasts.apple.com/us/podcast/guest-dr-chris-mattmann-rocket-scientist-ai-analy/id1434205566?i=1000496248787)
6. C. Mattmann. "Python and ML at NASA Jet Propulsion Laboratory (JPL)". *TalkPython.fm*, October 16, 2020.
<https://talkpython.fm/episodes/show/286/python-and-ml-at-nasa-jet-propulsion-laboratory>
7. C. Mattmann. "Radically Curious: Episode #4: Chris Mattmann, Deputy CTO of NASA JPL." *Radically Curious*, July 30, 2020.
<https://youtu.be/Fca9pSmGh20>
8. C. Mattmann. "How NASA Is Using Machine Learning — Meet Deputy CTO of NASA's JPL, Chris Mattmann". *TFIR.io*, June 22, 2020.
<https://youtu.be/C9L6MrT-xaY>
<https://www.tfir.io/how-nasa-is-using-machine-learning-meet-deputy-cto-of-nasas-jpl-ch>

9. C. Mattmann. “#111 Machine learning with TensorFlow with Chris Mattmann - Author / Manager, Chief Technology and Innovation Officer”. *Data Futurology Podcast*, Published May 19, 2020.
<https://bit.ly/2A3g9jM>
10. C. Mattmann. “Machine Learning with TensorFlow and Apache Kafka”. *Streaming Audio: A Confluent Podcast*. Published March 11, 2020.
<https://bit.ly/2VGqfjj>
11. C. Mattmann. “Special Guest: Chris Mattmann, Author of Machine Learning with TensorFlow, Second Edition”. *Front Matter Podcast*, LeanPub Publications. Published February 25, 2020.
<https://leanpub.com/podcasts/frontmatter/chris-mattmann-26-02-20>
12. C. Mattmann. “Episode 25: NASA Data Scientist Chris Mattmann”. *Cog Nation Podcast*, Published February 22, 2020.
<https://cognition.fireside.fm/25>
13. C. Mattmann. “Episode 06: Chris Mattmann - NASA’s data scientist”. Interviewed by R. McGranaghan. *Origins Podcast*. Published May 3, 2019.
<https://bit.ly/2WSDjmV>
14. C. Mattmann, K. Singh. “When Data’s Deep, Dark Places Need to be Illuminated”. Interviewed by J. Salazar. Texas Advanced Super Computing Center (TACC) - Use TACC Podcast. Published. January 26, 2017.
<https://soundcloud.com/usetacc/when-datas-deep-dark-places-need-to-be-illuminated/s-RgNW2>
15. C. Mattmann. “Chris Mattmann: NASA, Open Source and the Dark Web.” Interviewed by Jonathon Morgan. Partially Derivative (PartiallyD). January 16, 2017.
<http://partiallyderivative.com/podcast/2017/01/17/chris-mattmann>
16. C. Mattmann. “Explore analytics in space with NASA’s Principal Scientist in Data Science, Chris Mattmann.” Interviewed by Brooke Hemphill. ADMA Advanced Analytics - Brightest Minds series. October 5, 2016.
<http://bit.ly/2dsnvTo>
17. C. Mattmann, J. Klemm. “FedOSS: Creating open source communities”. FedScoop. Luke Fretwell and Gunnar Hellekson. Published Tuesday June 18, 2013.
<http://fedscoop.com/fedoss-creating-open-source-communities/>
18. C. Mattmann “Episode 078 TMTC Chris Mattmann OODT/NASA”. Teach Me To Code Podcast. Charles Max Wood, for TeachMeToCode.com. ApacheCon NA 2011 ancillary interview, Vancouver, BC, November 11, 2011, published December 30, 2011. <http://teachmetocode.com/podcast/078-tmtc-chris-mattman-oodtnasa/>
19. C. Mattmann. “Episode 69 - Apache Tika”. FeatherCast - An unofficial podcast from the world of the Apache Software Foundation. August 11th, 2010. Rich Bowen for FeatherCast.
<http://bit.ly/bhul1u>.
20. C. Mattmann. “NASA technology leads to better medical decisions”. O’Reilly Radar. June 16, 2010. Alex Howard, for O’Reilly Media, Government 2.0 Health IT series, for the O’Reilly Open Source Convention (OSCON) 2010, Portland, Oregon, July 19-23. <http://oreil.ly/d2vRk4>.
21. C. Mattmann. “An Architecture-based Framework for Biomarker Discovery and Management in the Early Detection Research Network.” BlogTalk Radio. February 2, 2010. International Quality & Productivity Center (IQPC) New York (IQPC-NYC) in preparation for the 6th Laboratory Informatics Conference, Philadelphia, PA. February 2, 2010. <http://bit.ly/bQR6Mp>.

Webinars

1. NextGov: An Editorial Webcast. “From Big Data to Big Opportunities - How Government Can Benefit”. Chris A. Mattmann, G. Nagesh Rao. Wednesday, March 11, 2015.
<http://goo.gl/GVFgvd>
2. BrightTALK Business Intelligence and Analytics Webinar. “Apache Hadoop, Meet Rocket Science: Big Data at NASA”. Chris A. Mattmann. January 23, 2014.
<https://www.brighttalk.com/webcast/9059/94531>
3. The Quest for Canada’s Smartest IT. “Conquering the Data Deluge”. Chris A. Mattmann, NASA, David Corrigan, IBM InfoSphere. February 14, 2012.
<http://twebevent.com/bigdatachat>
<http://smartest-it.ca/content/webinar/conquering-data-deluge>

Television

1. CBS WFMY (Greensboro, NC). Experts: Equifax Failed To Install Software Fix. September 15, 2017.
<http://on.wfmy.com/2x7b8nd>
2. CBS WDTV (West Virginia), Tech experts discuss what may have gone wrong in Equifax hack. September 15, 2017.
<http://bit.ly/2y8rDf0>
3. CBS This Morning. Cybersecurity experts on Equifax’s failure to install software fix. September 15, 2017.
<http://cbsn.ws/2h7P9Gs>
4. NBC Nightly News with Lester Holt. Equifax, Software Company Blame Each Other for Security Breach. September 14, 2017.
<http://nbcnews.to/2jrFlay>
5. NBC4 Los Angeles. “The Deep Web - 06/08/2015”, Interviewed by Lolita Lopez, July 8, 2015.
<http://bit.ly/1MgD9qD>
6. I24 News (English). “Economy and Innovation - 06/22/2015”, Interviewed by Natalie Erlich, June 23, 2015.
<https://www.youtube.com/watch?v=3Xc4jKrf9Js&feature=youtu.be>
7. EMC Corporation. “Big Data Deep Dive: Predictive Powers (ep. 5)”, December 3, 2012.
<http://www.youtube.com/watch?v=iMx2nuDy00w&list=PL4FA858FF5B19C82B>

Interviews

1. Cognitica. Machine Learning from the Trenches: the Artificial Intelligence, Analytics and Innovation Division at the Jet Propulsion Laboratory. *Data for AI Week*. September 14, 2020.
<https://dataconf.cognilytica.com/session/machine-learning-from-the-trenches-the-artificial-intelligence>
2. Dell/EMC. “TACC Big Data Solution leveraging the Dell EMC DSSD D5, Dell servers, Intel, and Cloudera”. Oct 27, 2016.
<https://www.youtube.com/watch?v=wAB3GJTnWpw>
3. Databricks. “Spark Spot: Chris Mattmann Interview”. June 15, 2015.
https://www.youtube.com/watch?v=Q5Mr-UQU7_o
4. The Cube - Hadoop Summit 2012 Interview. Jeff Kelly and Abhi Mehta. Wednesday, June 13, 2012.
<http://www.siliconangle.tv/video/cube-hadoop-summit-2012-chris-mattmann>

PUBLICATIONS

Books

1. C. Mattmann. *Machine Learning with TensorFlow: 2nd Edition*. 456 pages. New York: Manning Publications, December 2020. ISBN 9781617297717
<https://www.manning.com/books/machine-learning-with-tensorflow-second-edition>

2. C. Mattmann. Foreword to *Deep Learning for Search*. Author: T. Teofili. 328 pages. New York: Manning Publications, June 2019. ISBN 9781617294792.
<https://www.amazon.com/Deep-Learning-Search-Tommaso-Teofili/dp/1617294799>
<https://www.manning.com/books/deep-learning-for-search>
3. C. Mattmann and J. Zitting. *Tika in Action*. 256 pages. New York: Manning Publications, November 2011. ISBN: 9781935182856.
<http://www.amazon.com/Tika-Action-Chris-Mattmann/dp/1935182854>
<http://manning.com/mattmann/>

Refereed Journals

1. S. Berndt, W. Burke, M. M. Gandara, M. Kimes, L. Klyne, C. Mattmann, M. Milano, J. Nelson, B. Nuernberger, M. Sekiya, A. Towler, A. Tran. From Universe to Metaverse: A Leap into Virtual Collaboration at NASA JPL. *IEEE Transactions on Industrial Cyber-Physical Systems*. TICPS-23-0111, doi: 10.1109/TICPS.2023.3327948, Volume: 1, Page(s): 287-306, ISSN: 2832-7004, November 9, 2023.
2. A. Paiva, W. Li, Y. Lin, C. Mattmann, M. de Hoop. Introduction to the Special Issue on Deep Learning for Earth and Planetary Geosciences. *IEEE Transactions on Neural Networks and Learning Systems*. Guest Editor. Volume/Issue: Volume 34 , Issue 7. Digital Object Identifier: 10.1109/TNNLS.2023.3282150. Manuscript Number: editorial-3282150. July 7, 2023.
<https://ieeexplore.ieee.org/document/10175017>
3. A. Lavin, C. M. Gilligan-Lee, A. Visnjic, S. Ganju, D. Newman, S. Ganguly, D. Lange, A. G. Baydin, A. Sharma, A. Gibson, S. Zheng, E. P. Xing, E. C. Mattmann, J. Parr, & Y. Gal. Technology readiness levels for machine learning systems. *Nature communications*, Vol. 13, No. 1, 6039. Oct 20, 2022.
<https://doi.org/10.1038/s41467-022-33128-9>
4. A. Kumar, T. Islam, Y. Sekimoto, C. Mattmann and B. Wilson. Convcast: An embedded convolutional LSTM based architecture for precipitation nowcasting using satellite data. *PLOS One*, Mar 11, 2020.
<https://doi.org/10.1371/journal.pone.0230114>
5. D. Qiu, B. Rothrock, T. Islam, A. K. Didier, V. Z. Sun, C. Mattmann, M. Ono. SCOTI: Science Captioning of Terrain Images for Data Prioritization and Local Image Search. *Planetary and Space Science*, Volume 188, 1 September 2020, 104943.
<https://doi.org/10.1016/j.pss.2020.104943>
<https://www.sciencedirect.com/science/article/pii/S0032063319301242>
6. H. Ramapriyan, R. Downs , J. Dozier , R. Duerr , M. Folk , J. Frew , N. Hoebelheinrich , C. Mattmann and G. Peng. Bruce Barkstrom (1944–2018), *EOS*, 100. Published on 11 February 2019.
<https://eos.org/articles/bruce-barkstrom-1944-2018>
<https://doi.org/10.1029/2019E0115561>
7. R. McGranaghan, A. Mannucci, B. Wilson, C. Mattmann, R. Chadwick. New capabilities for prediction of high-latitude ionospheric scintillation: A novel approach with machine learning. *Space Weather*, Vol. 16, Issue 11, November 2018, Pages 1817-1846. doi: 10.1029/2018SW002018
<https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2018SW002018>
8. T. H. Painter, D. Berisford, J. Boardman, K. Bormann, J. Deems, F. Gehrke, A. Hedrick, M. Joyce, R. Laidlaw, D. Marks, C. Mattmann, B. McGurk, P. Ramirez, M. Richardson, F. Seidel, S. M. Skiles, A. Winstal. The Airborne Snow Observatory: scanning lidar and imaging spectrometer fusion for mapping snow water equivalent and snow albedo. *Remote Sensing of the Environment*, Vol. 184, No. 10, pp. 139-152, 2016.

<http://dx.doi.org/10.1016/j.rse.2016.06.018>
<http://www.sciencedirect.com/science/article/pii/S0034425716302577>

9. C. Mattmann, L. Cinquini, P. Zimdars, M. Joyce, S. Khudikyan. A Topical Evaluation and Discussion of Data Movement Technologies for Data-Intensive Scientific Applications. *Earth Science Informatics*, Vol. 9, No. 2, pp. 247-262.
<http://link.springer.com/article/10.1007/s12145-015-0243-1>
doi:10.1007/s12145-015-0243-1
10. J. Schnase, T. J. Lee, C. Mattmann, C. S. Lynnes, L. Cinquini, P. M. Ramirez, A. F. Hart, D. Williams, D. Waliser, P. Rinsland, W. P. Webster, D. Q. Duffy, M. A. McInerney, G. Tamkin, G. L. Potter, L. Carriere. Big Data Challenges in Climate Science. *IEEE Geoscience and Remote Sensing Magazine*. October 2015.
11. M. E. Pierce, S. Maru and C. Mattmann. Patching It Up, Pulling It Forward. *Journal of Open Research Software* 3: e12, 2015.
DOI:<http://dx.doi.org/10.5334/jors.bz>
<http://openresearchsoftware.metajnl.com/articles/10.5334/jors.bz/>
12. D. Clifford, R. Alegre, V. Bennett, J. Blower, C. DeLuca, P. Kershaw, C. Lynnes, C. Mattmann, R. Phipps, I. Rozum. Capturing and sharing our collective expertise on climate data: the CHARMe project. *Bulletin of the American Meteorological Society*. September 2015.
doi:10.1175/BAMS-D-14-00189.1
<http://journals.ametsoc.org/doi/pdf/10.1175/BAMS-D-14-00189.1>
13. J. Kim, J. Sanjay, D. Waliser, C. Mattmann, M. Boustani, H. Lee, P. Loikith, M.V.S. Rama Rao, R. Krishnan. Uncertainties in Estimating Spatial and Interannual Variations in Precipitation Climatology in the India-Tibet Region from Multiple Gridded Precipitation Datasets. *International Journal of Climatology*, February 2015.
DOI:10.1002/joc.4306
14. P. C. Loikith, J. Kim, H. Lee, B. Linter, C. Mattmann, J. J. D. Neelin, D. E. Waliser, L. Mearns, S. McGinnis. Evaluation of Surface Temperature Probability Distribution Functions in the NARCCAP Hindcast Experiment. *Journal of Climate*, Vol. 28, No. 3, pp. 978-997, February 2015.
doi:10.1175/JCLI-D-13-00457.1.
15. C. Mattmann, J. Garcia, I. Krka, D. Popescu, N. Medvidovic. Revisiting the Anatomy and Physiology of the Grid. *Journal of Grid Computing*, vol. 13, no. 1, pp. 19-34, March 2015.
DOI10.1007/s10723-015-9324-0
<http://link.springer.com/article/10.1007/s10723-015-9324-0>
16. A. F. Hart, L. Cinquini, S. Khudikyan, D. G. Thompson, C. Mattmann, K. Wagstaff, J. Lazio, D. Jones. A Framework for Collaborative Review of Candidate Events in High Data Rate Streams: The V-FASTR Experiment as a Case Study. *The Astronomical Journal*, Vol. 149, No. 1, pp. 1-7, December 16, 2014.
<http://stacks.iop.org/1538-3881/149/i=1/a=23>
doi:10.1088/0004-6256/149/1/23
17. C. Law, G. Bower, S. Burke-Spolaor, B. Butler, E. Lawrence, T. J. Lazio, C. Mattmann, M. Rupen, A. Siemion, and S. VanderWiel. A Milisecond Interferometric Search for Fast Radio Bursts with the Very Large Array. *The Astronomical Journal*, Accepted, to appear, June 2015.
<http://arxiv.org/abs/1412.7536>
18. C. Mattmann. "DataViz Hackathon": Creative Collaboration between Polar Researchers and the Cyberinfrastructure Community. *Witness the Arctic*, Fall 2014, Issue No. 3.
<http://www.arcus.org/witness-the-arctic/2014/3/article/22798>
19. K. Whitehall, C. Mattmann, G. Jenkins, M. Rwebangira, B. Demoz, D. Waliser, P. Zimdars, C. Goodale, A. Hart, P. Ramirez, M. Joyce, M. Boustani, P. Loikith, H. Lee. Exploring a graph theory based algorithm for automated identification and characterization of large mesoscale

- convective systems in satellite datasets. *Earth Science Informatics*, volume 8, number 3. pp. 663-675 (2015).
DOI10.1007/s12145-014-0181-3
20. V. Pankratius and C. Mattmann. Computing in Astronomy: To See The Unseen. *IEEE Computer - Introduction to Special Issue on Computing in Astronomy*, Vol. 47, No. 9, pp. 26-28, September, 2014.
 21. A. Hart, S. Khudikyan, L. Cinquini, D. Thompson, C. Mattmann, K. Wagstaff, J. Lazio, and D. Jones. Supporting Distributed, Collaborative Review and Classification of Fast Transient Events. In *IEEE Computer - Special Issue on Computing in Astronomy*, Vol. 47, No. 9, pp. 43-44, September 2014.
 22. C. Mattmann. Cultivating a Research Agenda for Data Science. *Journal of Big Data*, Vol. 1, No. 6, August, 2014.
doi:10.1186/2196-1115-1-6
<http://www.journalofbigdata.com/content/1/1/6>
 23. C. Mattmann, D. Waliser, J. Kim, P. Ramirez, C. Goodale, A. Hart, P. Loikith, H. Lee, M. Joyce, M. Boustani, S. Khudikyan, K. Whitehall, J. Whittell, P. Zimdars, D. Crichton, Y. Gil, L. Cinquini. Model Evaluation Using the NASA Regional Climate Model Evaluation System (RCMES). *IEEE Earthzine*, December 2, 2013.
<http://goo.gl/yLpBA0>
 24. H. Lee, J. Kim, D. Waliser, P. Loikith, C. Mattmann, S. McGinnis. Using joint probability distribution functions to evaluate simulations of precipitation, cloud fraction and insolation in the North America Regional Climate Change Assessment Program (NARCCAP). *Climate Dynamics*, July 2014.
DOI10.1007/s00382-014-2253-y
 25. S. Park, C. Mattmann. Unlocking Big Data. *Geospatial Intelligence Forum (GIF)*, Vol. 11, Issue. 5, pp. 25, 26, July/August 2013.
 26. C. Mattmann, D. Waliser, J. Kim, C. Goodale, A. Hart, P. Ramirez, D. Crichton, P. Zimdars, M. Boustani, H. Lee, P. Loikith, K. Whitehall, C. Jack, B. Hewitson. Cloud Computing and Virtualization Within the Regional Climate Model and Evaluation System. *Earth Science Informatics*, vol. 7, no. 1, pp. 1-12.
<http://link.springer.com/article/10.1007%2Fs12145-013-0126-2>
 27. J. Kim, D. Waliser, C. Mattmann, L. Mearns, C. Goodale, A. Hart, D. Crichton, S. McGinnis, M. Boustani, H. Lee, P. C. Loikith and M. Boustani. Evaluation of the surface climatology over the conterminous United States in the North American Regional Climate Change Assessment Program hindmost experiment using regional climate model evaluation system. *Journal of Climate*, Volume 26 Issue 15 (August 2013).
<http://dx.doi.org/10.1175/JCLI-D-12-00452.1>
 28. J. Kim, D. E. Waliser, C. Mattmann, C. Goodale, A. Hart, P. Zimdars, D. Crichton, C. Jones, G. Nikulin, B. Hewitson, C. Jack, C. Lennard and A. Favre. Evaluation of the CORDEX-Africa multi-RCM Hindcast: Systematic Model Errors. *Climate Dynamics*, pp. 1-14, April 2013.
 29. C. Mattmann. A vision for data science. *Nature*, Vol. 493, No. 7433, pp. 473-475, January 24, 2013.
<http://www.nature.com/nature/journal/v493/n7433/full/493473a.html>
 30. L. Cinquini, D. Crichton, C. Mattmann, J. Harney, G. Shipman, F. Wang, R. Ananthakrishnan, N. Millerd, S. Denvil, M. Morgan, Z. Pobre, G. M.. Bell, C. Doutriaux, R. Drach, D. Williams, P. Kershaw, S. Pascoe, E. Gonzalez, S. Fiore, R. Schweitzer. The Earth System Grid Federation: An Open Infrastructure for Access to Distributed Geospatial Data. *Future Generation Computer Systems - Special Issue on Best Papers of eScience 2012*, Available online 17 September 2013, ISSN 0167-739X.

<http://www.sciencedirect.com/science/article/pii/S0167739X13001477>
<http://dx.doi.org/10.1016/j.future.2013.07.002>

31. K. Whitehall, C. Mattmann, D. Waliser, J. Kim, C. Goodale, A. Hart, P. Ramirez, P. Zimdars, D. Crichton, G. Jenkins, C. Jones, G. Asrar, B. Hewitson. Building Model Evaluation And Decision Support Capacity For CORDEX. *WMO Bulletin*, Vol. 61, No. 2, pp. 29-34, 2012.
http://www.wmo.int/pages/publications/bulletin_en/61_2_cordex_en.html
32. B. R. Barkstrom, C. Mattmann. A Simple Model Illustrating the Virtue of Replication for Long-Term Information Preservation. *Earth Science Informatics*, Volume 5, Issue 2 (2012), Page 105-109. DOI: 10.1007/s12145-012-0100-4.
<http://www.springerlink.com/openurl.asp?id=doi:10.1007/s12145-012-0100-4>
33. C. Mattmann, D. Crichton, A. Hart, S. Kelly, C. Goodale, R. R. Downs, P. Ramirez, J. S. Hughes, F. Lindsay. Understanding Open Source Software at NASA. *IEEE IT Professional – Special Theme on NASA Contributions to IT*, Vol. 14, No. 2, pp. 29-35, March/April 2012. Selected to appear in *Essential Articles on Information Technology - Essence of IEEE IT Pro 2012*
34. C. Mattman, B. Foster, A. Chang, D. Crichton, D. Freeborn, D. Woollard. Generic, Extensible, Configurable Push-Pull Framework for Large-Scale Science Missions. *NASA Tech Briefs*, Vol. 35, No. 7, pp. 50, July 2011.
35. C. Mattmann, N. Medvidovic, S. Malek, G. Edwards, S. Banerjee. A Middleware Platform for Providing Mobile and Embedded Computing Instruction to Software Engineering Students. *IEEE Transactions on Education*, Vol. 55, No. 3, pp. 425-435, August 2012.
36. D. Crichton, C. Mattmann, L. Cinquini, A. Braverman, D. Waliser, A. Hart, C. Goodale, P. Lean. Sharing Satellite Observations with the Climate Modeling Community: Software and Architecture. *IEEE Software*, Vol. 29, No. 5., September/October 2012, pp. 63-71.
37. C. Mattmann, R. R. Downs, J. J. Marshall, N. Most, S. Samadi. Tools to Support the Reuse of Software Assets for the NASA Earth Science Decadal Survey Missions. *IEEE Geoscience and Remote Sensing Newsletter*, March 2011, Issue 158, pp. 17-22.
38. C. Mattmann, D. Crichton, A. Hart, S. Kelly, J. S. Hughes. Experiments with Storage and Preservation of NASA's Planetary Data via the Cloud. *IEEE IT Professional – Special Theme on Cloud Computing*, Vol. 12, No. 5, pp. 28-35, September/October, 2010. Selected to appear in *Essential Articles on Information Technology - Essence of IEEE IT Pro 2010*
<http://yamashita.computer.org/readynotes/SEBundle/ES0000035-ITPro.pdf>
39. R. Wetzal, D. Crichton, C. Mattmann, A. Hart, D. Kale, R. Khemani, P. Ross, P. Vee, J. Terry. An open-source, grid-based software framework for management and sharing of pediatric intensive care unit data. *Journal of Critical Care*, Vol. 26, No. 2, pp. e13-e14, April 2010.
<http://www.sciencedirect.com/science/article/pii/S0883944111000633>
40. C. Mattmann, A. Braverman, D. Crichton. Understanding Architectural Tradeoffs Necessary to Increase Climate Model Intercomparison Efficiency. *ACM SIGSOFT Software Engineering Notes*, vol. 35, no. 3, pp. 1-6, May 2010.
41. J. S. Hughes, D. Crichton and C. Mattmann. Ontology-Based Information Model Development for Science Information Reuse and Integration. *International Transactions on Systems Science and Applications - Special Issue on Information Reuse in Databases and Data Mining*, Vol 6., No. 2/3, pp. 200-211, August 2010.
42. N. Medvidovic and C. Mattmann. Leveraging Software Architecture to Reconcile the Promise and Reality of Grid Computing. *Infosys Technology Roundtable (TRT) newsletter*, September 2009.
43. C. Mattmann, D. Freeborn, D. Crichton, J. S. Hughes, P. Ramirez, S. Hardman, D. Woollard, and S. Kelly. Transformation of OODT CAS To Perform Larger Tasks. *NASA Tech Briefs*, Vol. 32, No. 6, pp. 44, June 2008.

44. D. Woollard, N. Medvidovic, Y. Gil, and C. Mattmann. Scientific Software as Workflows: From Discovery to Distribution. *IEEE Software – Special Issue on Developing Scientific Software*, Vol. 25, No. 4, July/August, 2008.
45. J. Steven Hughes, D. Crichton, S. Kelly, C. Mattmann, J. Crichton, and T. Tran. Intelligent Resource Discovery using Ontology-based Resource Profiles. *Data Science Journal*, Vol. 4, pp. 171-188, December 2005. Article available at:
http://journals.eecs.qub.ac.uk/codata/journal/contents/4_05/4_05pdfs/DS415.pdf
46. S. Banerjee, C. Mattmann, N. Medvidovic, L. Golubchik. Leveraging architectural models to inject trust into software systems. *ACM SIGSOFT Software Engineering Notes*, vol. 30, no. 4, pp. 1-7, July 2005.

Book Chapters

1. M. Ono, B. Rothrock, Y. Iwashita, S. Higa, V. Timmaraju, S. Sahnoune, D. Qui, T. Islam, A. Didier, C. Laporte, D. Atha, V. Sun, K. Otsu, M. Paton, O. Lamarre, S. Daftry, R. Swan, A. Stambouli, F. Chen, B. Shah, K. Stack and C. Mattmann. Machine Learning for Mars Rovers. *Machine Learning for Planetary Science*. Elsevier, 2022.
2. C. Mattmann, A. Hart, L. Cinquini, J. Lazio, S. Khudikyan, D. Jones, R. Preston, T. Bennett, B. Butler, D. Harland, B. Glendenning, J. Kern, J. Robnett. Scalable Data Mining, Archiving and Big Data Management for the Next Generation Astronomical Telescopes. *Big Data Management, Technologies, and Applications*. W. Hu, N. Kaabouch, eds. IGI Global, pp. 196-221, 2013.
<http://www.igi-global.com/book/big-data-management-technologies-applications/>.
3. D. Crichton, C. Mattmann, E. Law, G. Chang, L. Cinquini, S. Hardman, K. Shams. Architecting Scientific Data Systems in the Cloud. In *Cloud Computing: Methods and Practical Approaches*. Z. Mahmood, eds. Springer Verlag, pp. 25-46, 2013.
4. C. Mattmann, P. Zimdars, C. Goodale, A. Hart, J. Kim, D. Waliser, P. Lean. NASA Jet Propulsion Laboratory - the Regional Climate Model Evaluation System. In *Programming Hive*. E. Capriolo, D. Wampler, J. Rutherglen, eds. 1st edition. O'Reilly Media, Inc., pp. 287-291, October 2012.
<http://shop.oreilly.com/product/0636920023555.do>
5. C. Mattmann, D. Crichton, A. Hart, C. Goodale, J. S. Hughes, S. Kelly, L. Cinquini, T. H. Painter, J. Lazio, D. Waliser, N. Medvidovic, J. Kim, P. Lean. Architecting Data-Intensive Systems. In *Handbook of Data Intensive Computing*, B. Furht, A. Escalante, eds. 1st Edition. Springer Verlag, 2011.
6. D. Crichton, C. Mattmann, J. S. Hughes, S. Kelly, and A. Hart. A Multi-Disciplinary, Model-Driven, Distributed Science Data System Architecture. In *Guide to e-Science: Next Generation Scientific Research and Discovery*. X. Yang, L. L. Wang, W. Jie, eds. 1st Edition. XVIII, 558 p. 184 illus., Springer Verlag, ISBN 978-0-85729-438-8, 2011.
7. D. Crichton, C. Mattmann, M. Thornquist, J. S. Hughes, K. Anton. Bioinformatics: Biomarkers of Early Detection. In *Translational Pathology of Early Cancer*. W. Grizzle, S. Srivastava, eds. IOS Press, Cancer Biomarkers Volume 9, Number 1-6 / 2011, pp. 511-530.
8. C. Mattmann and N. Medvidovic. The Grid Lite DREAM: Bringing the Grid to your Pocket. In *Reliable Systems on Unreliable Networked Platforms*. F. Kordon, J. Sztipanovits, eds. Springer Verlag, (LNCS) 4322, pp. 70-87, 2007.

Refereed Conferences and Workshops

1. T. Gowda, Z. Chang, C. Mattmann and J. May. Many-to-English Machine Translation Tools, Data, and Pretrained Models. To appear in *Proceedings of the ACL-IJCNLP Demo Track 2021*, Bangkok, Thailand, 1-6 August 2021

2. T. Allison, W. Burke, C. Mattmann, A. Mensikova, P. Southam, R. Stonebraker. Research Report: Building a File Observatory for Secure Parser Development. In *Proceedings of the Seventh Workshop on Language-Theoretic Security (LangSec)* at the *IEEE CS Security & Privacy Workshops*, May 27th and 28th, 2021.
3. F. Chen, S. Daftry, A. Didier, D. Atha, R. Swan, C. Mattmann, M. Ono. SULU: Scalable and Distributed Machine Learning Framework with Unified Encoder for Mars Rover Missions. In *Proceedings of the I-SAIRAS 2020 International Symposium on Artificial Intelligence, Robotics and Automation in Space*, Pasadena, California, October 18-21, 2020.
4. H. Venkataram, I. Colwell, S. Liu, P. Southam, C. Mattmann, T. Soderstrom. Names Don't Fly: Smart Filters for Profanity Detection and Classification in User-Generated Content. In *Proceedings of Workshop on Data Science with Human in the Loop (DaSH)* at *SIGKDD '20*, Aug 22-27, 2020, San Diego, CA. ACM, New York, NY, USA.
5. T. Allison, W. Burke, V. Constantinou, C. Mattmann, A. Mensikova, P. Southam, R. Stonebraker, V. Timmaraju. Work-In-Progress: Building a Wide Reach Corpus for Secure Parser Development. In *Proceedings of the Sixth Workshop on Language-Theoretic Security (LangSec)* at the *IEEE CS Security & Privacy Workshops*, San Francisco, CA, May 18-20, 2020.
6. M. Ono, B. Rothrock, K. Otsu, S. Higa, Y. Iwashita, A. Didier, T. Islam, C. Laporte, V. Sun, K. Stack, J. Sawoniewicz, S. Daftry, V. Timmaraju, S. Sahnoun, C. Mattmann. MAARS: Machine learning-based Analytics for Rover Systems. *Proceedings of IEEE Aerospace Conference*. Mar 7 - Mar 14, 2020, Yellowstone Conference Center, Big Sky, Montana.
7. C. Mattmann and Z. Zhang. Deep Facial Recognition using TensorFlow. In *Proceedings of the 2009 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.
8. S. Nandakumar, C. Mattmann, N. Ottilingam, M. Marin, A. Latzer, U. Handore. IRMA: Intelligent Referral Matching Assistant for Social Good. In *Proceedings of the Grace Hopper Celebration (GHC) 2018 Conference*, Houston, TX, September 26-28, 2018.
9. A. Mishra, C. Mattmann, P. Ramirez, and W. Burke. ROACH: Online Apprentice Critic Focused Crawling via CSS Cues and Reinforcement. In *Proceedings of the 14th International Workshop on Mining and Learning with Graphs* held in conjunction with the *24th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, London, United Kingdom, August 19 - 23, 2018.
10. A. Mensikova, C. Mattmann. Ensemble Sentiment Analysis to Identify Human Trafficking in Web Data. In *Proceedings of the GTA³ 2018: Workshop on Graph Techniques for Adversarial Activity Analytics* held in conjunction with the *11th ACM International Conference on Web Search and Data Mining (WSDM 2018)*, February 9th, 2018, The Ritz-Carlton Hotel, Marina Del Rey, California, USA.
11. S. Stathatos, A. Mishra, C. Mattmann. Cyber Persona Identification via Indirect Feature Analysis. In *Proceedings of the GTA³ 2018: Workshop on Graph Techniques for Adversarial Activity Analytics* held in conjunction with the *11th ACM International Conference on Web Search and Data Mining (WSDM 2018)*, February 9th, 2018, The Ritz-Carlton Hotel, Marina Del Rey, California, USA.
12. K. Hundman, C. Mattmann. Measurement Context Extraction from Text: Discovering Opportunities and Gaps in Earth Science. In *Proceedings of the Workshop on Data Driven Discovery to be held at the 23rd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, Halifax, Nova Scotia, Canada, August 2017.
<https://arxiv.org/abs/1710.04312>
13. J. Hong, C. Mattmann, and P. Ramirez. Ensemble Maximum Entropy Classification and Linear Regression for Author Age Prediction. In *Proceedings of the IEEE International Conference on Information Reuse and Integration*, Aug 4-6, 2017. San Diego, CA, USA.

14. M. Sharan, N. Krishna, C. Mattmann, K. Singh, M. Marin, A. Latzer, C. Foon, and U. Handore. An Automated Approach for Information and Referral of Social Services using Machine Learning. In *Proceedings of the IEEE International Conference on Information Reuse and Integration*, Aug 4-6, 2017. San Diego, CA, USA.
15. T. Gowda, K. Hundman, C. Mattmann. An Approach for Automatic and Large Scale Image Forensics and Search. In *Proceedings of the Multimedia Forensics and Security Workshop collocated with the ACM International Conference on Multimedia Retrieval (ICMR)*, Bucharest, Romania, June 2017.
16. C. Mattmann, M. Sharan. Scalable Hadoop-Based Pooled Time Series of Big Video Data from the Deep Web. In *Proceedings of the ACM International Conference on Multimedia Retrieval (ICMR)*, Bucharest, Romania, June 6-9, 2017.
17. F. Lind, C. Lonsdale, R. Volz, A. Coster, C. Eckert, R. McWhirter, J. Marchese, R. Schaefer, W. Rideout, R. Wilcox, A. Faulkner, E. de Lera Acedo, N. Razavi-Ghods, C. Mattmann, P. Ramirez. In *Proceedings of the 2017 IEEE AP-S Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting*, July 9-14, 2017, San Diego, California, USA.
18. S. Jodha-Khalsa, C. Mattmann, R. Duerr. Polar Data Insights through Search Analytics, Machine Learning and Advanced Visualization. In *Proceedings of Arctic Science Summit Week (ASSW)*, March 31 - April 7, 2017.
19. S. Jodha-Khalsa, C. Mattmann, R. Duerr. Deep Web Crawling for Insights from Polar Data. In *Proceedings of the 2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, July 23-28, 2017, Fort Worth, Texas, USA.
20. B. Wilson, R. Palamuttam, K. Whitehall, C. Mattmann, A. Goodman, M. Boustani, S. Shah, P. Zimdars and P. Ramirez. SciSpark: Highly Interactive In-Memory Science Data Analytics. In *Proceedings of the 2nd Big Data in the Geosciences Workshop* held as part of the *IEEE International Conference on Big Data*, Washington DC, December 5, 2016.
21. Z. Parekh, C. Mattmann and K. Singh. Improving accuracy of Tesseract in extraction of serial numbers from images of Counterfeit Electronics. In *Proceedings of the Grace Hopper Celebration India (GHCI) 2016 Conference*, Bangalore, India, December 7-9, 2016.
22. C. Mattmann and M. Sharan. An Automatic Approach for Discovering and Geocoding Locations in Domain-Specific Web Data. In *Proceedings of the IEEE International Conference on Information Reuse and Integration*, Pittsburgh, Pennsylvania, USA, July 28-30, 2016.
23. T. Gowda and C. Mattmann. Clustering Web Pages Based on Structure and Style Similarity. In *Proceedings IEEE International Conference on Information Reuse and Integration*, Pittsburgh, Pennsylvania, USA, July 28-30, 2016.
24. L. Intagliata, S. Chu, G. McGrath, G. Totaro, D. Civello, N. Doshi, S. Thapar, M. Livstone, C. Mattmann, P. Ramirez, M. Cronin. A Cloud-Enabled Open Source Data Management platform supporting a Federated Research and Development Organization. In *Proceedings of the American Association for Cancer Research (AACR) Meeting*, New Orleans, LA, April 16 - 20, 2016.
25. C. Mattmann, L. Intagliata, S. Chu, G. McGrath, G. Totaro, D. Civello, N Doshi, S. Thapar, M. Livstone, P. Ramirez, M. Cronin. Shangri-Docs: A Browser Based Tool for Document Exploration and Automatic Knowledge Extraction from Unstructured Biomedical Text. In *Proceedings of the American Association for Cancer Research (AACR) Meeting*, New Orleans, LA, April 16 - 20, 2016.
26. C. Mattmann, G. Yang, H. Manjunatha, T. Gowda N., A. J. Zhou, J. Lou, L. McGibney. Multimedia Metadata-based Forensics in Human Trafficking Web Data. In *Proceedings of 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 22-25, 2016.

27. A. B. Burgess, C. Mattmann, G. Totaro, L. McGibbney, P. Ramirez. TREC Dynamic Domain: Polar Science. In *Proceedings of the Text Retrieval Conference (TREC)*, National Institute of Standards and Technology, Gaithersburg, Maryland USA, November 17-20, 2015.
http://trec.nist.gov/pubs/trec24/papers/JPL_USC-DD.pdf
28. K. Wagstaff, N. L. Lanza, E. Riloff, C. Mattmann, P. M. Ramirez. Automatic Generation of a Mars Target Encyclopedia. In *Proceedings of the AAAI Workshop on Knowledge Extraction from Text*, Phoenix, AZ, February 12-13, 2016.
29. C. Mattmann, J. Oh, T. Palsulich, L. McGibbney, Y. Gil, V. Ratnakar. DRAT: An Unobtrusive, Scalable Approach to Large Scale Software License Analysis. In *Proceedings of the 4th International Workshop on Software Mining* part of the *IEEE/ACM International Conference on Automated Software Engineering*, pp. 97-101, Lincoln, NE, November 9-13, 2015.
30. Y. Gil, C. Duffy, C. Mattmann, E. Robinson and K. Venayagamoorthy. The Geoscience Paper of the Future Initiative: Training Scientists in Best Practices of Software Sharing. In *Proceedings of the 3rd Workshop on Sustainable Software for Science: Practice and Experiences (WSSSPE3)*, Boulder, CO, September 28-30, 2015.
31. R. Palamuttam, R. Marroquin Mogrovejo, C. Mattmann, B. Wilson, K. Whitehall, R. Verma, L. McGibbney, and P. Ramirez. SciSpark: Applying In-memory Distributed Computing to Weather Event Detection and Tracking. In *Proceedings of the 1st Big Data in the Geosciences Workshop* held as part of the *IEEE International Conference on Big Data*, Santa Clara, CA, October 29-November 1, 2015.
32. F. D. Lind, C. J. Lonsdale, A. J. Faulkner, C. Mattmann, N. Razavi-Ghods, R. McWhirter, W. Rideout, S. Khudikyan, E. de Lera Acedo, P. Alexander, J. Marchese, C. Eckert, R. Cappallo, J. Vierinen, V. Pankratius, R. Schaefer, D. Oberoi, M. Joyce, L. Cinquini, R. Verma, C. Goodale, M. Boustani, M. Starch. Radio Array of Portable Interferometric Detectors (RAPID): Development of a deployable multiple application radio array. In *Proceedings of the IEEE International Conference on Electromagnetics in Advanced Applications (ICEAA)*, Torino, Italy, September 7-11, 2015.
33. R. Verma and C. Mattmann. Extending Spark Analytics with Tika Content Extraction. In *Proceedings of the 16th IEEE International Conference on Information Reuse and Integration*, San Francisco, CA, August 13-15, 2015.
34. L. McGibbney, K. Whitehall, C. Mattmann, and P. Carter. Enabling Linguistic Analysis of Scientific Metadata through Internationalizing NASA JPL's PODAAC. In *Proceedings of the 16th IEEE International Conference on Information Reuse and Integration*, San Francisco, CA, August 13-15, 2015.
35. C. Mattmann. A Revisiting of the Anatomy and Physiology of the Grid. In *Proceedings of 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*, pp. 27, Portland, OR, June 15-19, 2015.
[doi:10.1145/2753524.2753526](https://doi.org/10.1145/2753524.2753526)
<http://doi.acm.org/10.1145/2753524.2753526>
36. C. Mattmann, C. Lynnes, L. Cinquini, P. Ramirez, A. Hart, D. Williams, D. Waliser, P. Rinsland. Next Generation CyberInfrastructure to Support Comparison of Satellite Observations with Climate Models. In *Proceedings of European Space Agency 2014 Conference on Big Data from Space*, November 12-14, ESA-ESRIN, Frascati (Rome), Italy.
<http://congrexprojects.com/2014-events/bigdatafromspace>
37. M. Pierce, S. Marru, C. Mattmann. WSSSPE2: Patching It Up, Pulling It Forward. In *Proceedings of the 2nd Workshop on Sustainable Software for Science: Practice and Experiences - in conjunction with the SC14*, New Orleans, LA, November 16, 2014.
<http://dx.doi.org/10.6084/m9.figshare.1112540>

38. J. Schnase, T. Lee, G. Potter, B. Mayer, P. Webster and C. Mattmann. Big Data Challenges in Climate Sciences. In *Proceedings of European Space Agency 2014 Conference on Big Data from Space*, November 12-14, ESA-ESRIN, Frascati (Rome), Italy.
<http://congrexprojects.com/2014-events/bigdatafromspace>
39. C. Mattmann. Scientific Reproducibility via Rapid Algorithm Integration, Intelligent Data Movement and Automated Text and Metadata Extraction. In *Proceedings of the XSEDE14: Reproducibility Workshop*, Atlanta, GA, Monday, July 14, 2014.
https://www.xsede.org/documents/659353/703287/xsede14_mattmann.pdf
40. M. Pierce, S. Marru, L. Gunathilake, T. A. Kanewala, R. Singh, S. Wijeratne, C. Wimalasena, C. Herath, E. Chinthaka, C. Mattmann, A. Slominski, P. Tangchaisin. Apache Airavata: Design and Directions of a Science Gateway Framework. In *Proceedings of the 6th International Workshop on Science Gateways (IWSG)*, pp.48,54, 3-5 June 2014.
doi:10.1109/IWSG.2014.15
41. A. B. Burgess, C. Mattmann. Automatically Classifying and Interpreting Polar Datasets with Apache Tika. In *Proceedings of the 15th IEEE International Conference on Information Reuse and Integration*, pp. 863-867, August 13-15, 2014, San Francisco, CA.
42. R. Verma, A. Hart, C. Mattmann, D. Crichton, H. Kincaid, S. Kelly, M. Joyce, P. Zimdars. A Laboratory-targeted, Data Management and Processing System for the Early Detection Research Network. In *Proceedings of the 27th IEEE International Symposium on Computer Based Medical Systems (CBMS)*, pp. 401-405, New York, New York, May 27-29, 2014.
43. C. Mattmann, T. Painter, P. Ramirez, C. Goodale, A. F. hart, P. Zimdars, M. Boustani, S. Khudikyan, R. Verma, F. Seidel Caprez, J. Deems, A. Trangsrud, J. Boardman. 24 hour near real time processing and computation for the JPL Airborne Snow Observatory. In *Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (IGARSS14)*, pp. 5222-5225, Quebec, Canada, July 13-18, 2014.
<http://dx.doi.org/10.1109/IGARSS.2014.6947676>
44. C. J. Law, G. C. Bower, S. Burke-Spolaor, M. P. Rupen, B. J. Butler, S. V. der Wiel, J. Lazio, E. Lawrence, A. Siemion, C. Mattmann. A Survey for Cosmological Millisecond Radio Transients with the Very Large Array. In *American Astronomical Society Meeting*, vol. 224. 2014.
45. C. Law and G. Bower and S. Burke-Spolaor and B. Butler and E. Lawrence and T. Lazio and C. Mattmann and M. Rupen and A. Siemion and S. VanderWiel. Interferometric imaging of millisecond transients at 1 TB/hour *General Assembly and Scientific Symposium (URSI GASS)*. 2014 XXXIth URSI, 1-1, 2014.
46. M. Pierce, S. Marru, C. Mattmann. Sustainable Cyberinfrastructure Software Through Open Governance. In *Proceedings of the Workshop on Sustainable Software for Science: Practice and Experiences - in conjunction with the SC13'*, Denver, CO, November 17, 2013.
47. Y. Gil, V. Ratnakar, R. Verma, A. Hart, P. Ramirez, C. Mattmann, S. Park, A. Sumarlidason. Time-Bound Analytic Tasks on Large Datasets through Dynamic Configuration of Workflows. In *Proceedings 8th Workshop On Workflows in Support of Large-Scale Science (WORKS 2013)*, Denver, CO, November 17, 2013.
48. D. L. Tabb, K. Anton, M. Chambers, M. Colbert, A. F. Hatt, J. D. Holman, S. C. Kelly, H. Kincaid, C. Mattmann, and D. Crichton. Public infrastructure for cancer biomarker data capture, annotation, analysis, and distribution. In *Proceedings of the American Medical Informatics Association Annual Symposium (AMIA)*, Washington, DC, USA, November 16-20, 2013.
<http://knowledge.amia.org/amia-55142-a2013e-1.580047>
49. C. Law and G. Bower and S. Burke-Spolaor and B. Butler and E. Lawrence and T. Lazio and C. Mattmann and M. Rupen and A. Siemion and S. VanderWiel. VLA Searches for Fast Radio

- Transients at 1 TB hour. *Proceedings of the Hot-Wiring Transient Universe Workshop*. Vol. 4, No. 85, 2013.
50. F. D. Lind, C. Lonsdale, A. J. Faulkner, P. Alexander, C. Mattmann. Radio Array of Portable Interferometric Detectors (RAPID). In *Proceedings of the 2013 IEEE International Symposium on Phased Array Systems & Technology*, Waltham, Massachusetts, October 15-18, 2013.
 51. J. Garcia, I. Krka, C. Mattmann, and N. Medvidovic. Obtaining Ground-Truth Software Architectures. In *Proceedings of the 35th International Conference on Software Engineering - Software Engineering in Practice Track*. pp. 901-910, San Francisco, May 18-23, 2013.
 52. F. D. Lind, C. Lonsdale, A. J. Faulkner, P. Alexander, C. Mattmann. RAPID (Radio Array of Portable Interferometric Detectors). In *Proceedings of the 2013 National Radio Science Meeting*, Boulder, CO, January 9-12, 2013.
 53. S. Marru, M. Pierce, C. Mattmann. The Apache Software Foundation, Cyberinfrastructure, and Scientific Software: Beyond Open Source. In *Proceedings of the IEEE Supercomputing Conference - BOF sessions*, Salt Lake City, Utah, November 10-16, 2012.
 54. J. Kim, D. E. Waliser, C. Mattmann, L. Mearns, C. Goodale, A. Hart, D. Crichton, S. Mcginnis. Model Errors in Precipitation, Surface Insolation and Cloudiness in the NARCCAP Hindcast Experiment. In *Proceedings of the 2013 American Meteorological Society (AMS) meeting*, Austin, TX, January 6-10, 2013.
 55. L. Cinquini, D. Crichton, C. Mattmann, J. Harney, G. Shipman, F. Wang, R. Ananthakrishnan, N. Miller, S. Denvil, M. Morgan, Z. Pobre, G. Bell, B. Drach, D. Williams, P. Kershaw, S. Pascoe, E. Gonzalez, S. Fore, R. Schweitzer. The Earth System Grid Federation: An Open Infrastructure for Access to Distributed Geospatial Data. In *Proceedings of the 8th IEEE International Conference on eScience 2012*, Chicago, IL, October 8-12, 2012.
 56. C. Mattmann, R. R. Downs, P. Ramirez, C. Goodale, A. Hart, Developing an Open Source Strategy for NASA Earth Science Data Systems. In *Proceedings of the IEEE Information Reuse and Integration*, Las Vegas, NV, August 8-10, 2012.
 57. A. Hart, R. Verma, C. Mattmann, D. Crichton, S. Kelly, H. Kincaid, S. Hughes, P. Ramirez, C. Goodale, K. Anton, M. Colbert, R. R. Downs, C. Patriotis, S. Srivastava. Developing an Open Source, Reusable Platform for Distributed Collaborative Information Management in the Early Detection Research Network. In *Proceedings of IEEE Information Reuse and Integration*, Las Vegas, NV, August 8-10, 2012.
 58. D. L. Jones, K. Wagstaff, D. R. Thompson, L. D'Addario, R. Navarro, C. Mattmann, W. Majid, J. Lazio, R. Preston and U. Rebbapragada. Big Data Challenges for Large Radio Arrays. In *Proceedings of the 33rd IEEE Aerospace Conference*, March 2012.
 59. C. Mattmann. A Strategy for Open Source Software at NASA. In *Proceedings of the UCAR SEA Software Engineering Conference 2012*, Boulder, CO, February 21-24, 2012.
 60. C. Mattmann. The Apache OODT Ecosystem: A Bird's Eye View. In *Proceedings of the UCAR SEA Software Engineering Conference 2012*, Boulder, CO, February 21-24, 2012.
 61. R. Ferraro, A. Bingham, A. Braverman, H. Hua, C. Mattmann, M. Yew. How Far Should the DACs Evolve? To appear in *Proceedings of the IEEE Geoscience and Remote Sensing Symposium*, Munich, Germany, July 22-27, 2012.
 62. D. L. Jones, K. Wagstaff, D. Thompson, L. D'Addario, R. Navarro, C. Mattmann, W. Majid, J. Lazio, R. Preston, and U. Rebbapragada. Big Data Challenges for Large Radio Arrays. In *Proceedings of the IEEE Aerospace Conference*, Big Sky, Montana, March 3-10, 2012.
 63. S. Marru, L. Gunathilake, C. Herath, P. Tangchaisin, M. Pierce, C. Mattmann, R. Singh, T. Gunarathne, E. Chinthaka, R. Gardler, A. Slominski, A. Douma, S. Perera, S. Weerawarana. Apache Airavata: A framework for Distributed Applications and Computational Workflows. In *Proceedings of the SC 2011 Workshop on Gateway Computing Environments*, Seattle, WA, November 18, 2011.

64. C. Mattmann, D. Crichton, J. S. Hughes, P. Ramirez, S. Hardman, A. Hart, C. Goodale. Rapid and Effective Construction of Science Data Archives and Repositories using the OODT Process Control System. Abstract IN51D-01 presented at *2011 Fall Meeting, AGU*, San Francisco, Calif., 5-9 Dec.
65. R. Verma, C. Goodale, A. Hart, E. Law, D. Crichton, C. Mattmann, M. Gunson, A. Braverman, H. Nguyen, A. Aldering, B. Castano, G. Osterman. A Virtual Science Data Environment for Carbon Dioxide Observations. Abstract IN33D-1486 presented at *2011 Fall Meeting, AGU*, San Francisco, Calif., 5-9 Dec.
66. P. Ramirez, C. Goodale, B. Bui, G. Chang, R. Kim, E. Law, S. Malhotra, L. Rodriguez, S. Sadaqathullah, C. Mattmann, D. Crichton. Application of Open Source Software by the Lunar Mapping and Modeling Project. Abstract IN21D-08 presented at *2011 Fall Meeting, AGU*, San Francisco, Calif., 5-9 Dec.
67. D. Jones, C. Mattmann, A. Hart, J. Lazio, T. Bennett, K. Wagstaff, D. Thompson, R. Preston. Scalable Data Mining and Archiving for the Square Kilometre Array. Abstract IN23B-1456 presented at *2011 Fall Meeting, AGU*, San Francisco, Calif., 5-9 Dec.
68. C. Mattmann, D. Crichton, F. Lindsay, S. Berrick, J. J. Marshall, R. Downs. Defining an Open Source Strategy for NASA. Abstract IN21D-02 presented at *2011 Fall Meeting, AGU*, San Francisco, Calif., 5-9 Dec.
69. A. Hart, C. Goodale, C. Mattmann, P. Lean, J. Kim, P. Zimdars, D. Waliser, D. Crichton. A Reusable Framework for Regional Climate Model Evaluation. Abstract IN21D-07 presented at *2011 Fall Meeting, AGU*, San Francisco, Calif., 5-9 Dec.
70. J. S. Hughes, D. Crichton, C. Mattmann, R. Joyner, E. Rye, S. Hardman, P. Ramirez, S. Kelly, E. Law. The Role of Shared Information Models for Software Reuse in Cross-Disciplinary Data Systems. Abstract IN21D-06 presented at *2011 Fall Meeting, AGU*, San Francisco, Calif., 5-9 Dec.
71. J. Kim, D. Waliser, P. Lean, C. Mattmann, C. Goodale, A. Hart, P. Zimdars, B. Hewitson, C. Jones. Evaluation of the multi-model CORDEX-Africa hindcast using RCMES. Abstract A23C-0188 presented at *2011 Fall Meeting, AGU*, San Francisco, Calif., 5-9 Dec.
72. D. Waliser, J. Kim, C. Mattmann, C. Goodale, A. Hart, P. Zimdars, P. Lean. A Regional Climate Model Evaluation System based on contemporary Satellite and other Observations for Assessing Regional Climate Model Fidelity. Abstract GC21E-01 presented at *2011 Fall Meeting, AGU*, San Francisco, Calif., 5-9 Dec.
73. D. Crichton, C. Mattmann, A. Hart, J. S. Hughes, S. Hardman, E. Law, S. Kelly. Leveraging Open Source Technologies to Build Scientific Data Systems. Abstract IN21D-01 presented at *2011 Fall Meeting, AGU*, San Francisco, Calif., 5-9 Dec.
74. C. Goodale, T. H. Painter, C. Mattmann, A. F. Hart, P. Ramirez, P. Zimdars, A. C. Bryant. Building a Snow Data System on the Apache OODT Open Technology Stack. Abstract IN31A-1434 presented at *2011 Fall Meeting, AGU*, San Francisco, Calif., 5-9 Dec.
75. J. S. Hughes, D. Crichton, S. Hardman, R. Joyner, C. Mattmann, P. Ramirez and S. Kelly. An Ontology Driven Information Architecture for Interoperable Disparate Data Sources. In *Proceedings of EGU General Assembly 2011 (EGU)*, Vol. 13, EGU2011-9509, 2011.
76. C. Mattmann, A. Hart, D. Jones, R. Preston. SKA Data Archiving using Apache OODT. *Proceedings of SKA 2011: The international Square Kilometre Array Forum: Science and Frontiers of Astronomy in the Era of Massive Datasets: The Promise and Challenges*, Banff, Canada, 4-8 July 2011.
77. D. Jones, K. Wagstaff, D. Thompson, L. D'Addario, R. Navarro, C. Mattmann, W. Majid, J. Lazio, and R. Preston. Fast Transient Detection as a Prototypal Big Data Problem. In *Proceedings of the International Astronomical Union Symposium 285: New Horizons in Time Domain Astronomy*, Oxford, UK, September 19-23, 2011.

78. J. Marshall, R. R. Downs, C. Mattmann. Software Reuse Methods to Improve Technological Infrastructure for e-Science. In *Proceedings of IEEE IRI - Workshop on Issues and Challenges in Social Computing (WICSOC 2011)*, pp. 528-532, Las Vegas, NV, August 2, 2011.
79. J. Garcia, D. Popescu, C. Mattmann, N. Medvidovic, and Y. Cai. Enhancing Architectural Recovery Using Concerns. In *Proceedings of the 26th IEEE/ACM International Conference On Automated Software Engineering*, Lawrence, Kansas, November 6, 2011.
80. D. Waliser, P. Lean, J. Kim, C. Goodale, A. Hart, C. Mattmann, P. Zimdars. A Regional Climate Model Evaluation System based on Satellite and other Observations for Application to CMIP-IPCC/AR Downscaling. In *Proceedings of the World Climate Research Program (WCRP) Meeting*, Denver, CO, October 24-28, 2011.
81. J. Kim, D. Waliser, P. Lean, C. Mattmann, C. Goodale, A. Hart, P. Zimdars, B. Hewitson, C. Lennard, A. Favre, Colin Jones, G. Nikulin. Evaluation of the multiple-model CORDEX-Africa hindcast experiment using the RCMES. In *Proceedings of the World Climate Research Program (WCRP) Meeting*, Denver, CO, October 24-28, 2011.
82. L. Cinquini, A. Braverman, D. Crichton, C. Mattman, D. Waliser, D. Williams. Building the Software Infrastructure to Enable Usage of Satellite Observations for Climate Change. In *Proceedings of the World Climate Research Program (WCRP) Meeting*, Denver, CO, October 24-28, 2011.
83. D. Crichton, C. Mattmann, A. Hart, D. Kale, R. Khemani, P. Ross, S. Rubin, P. Veeravatanayothin, R. C. Wetzel, A. Braverman, C. Goodale. An Informatics Architecture for the Virtual Pediatric Intensive Care Unit. In *Proceedings of the 24th IEEE International Symposium on Computer-Based Medical Systems (CBMS 2011)*, Bristol, UK, June 27-30, 2011.
84. J. S. Hughes, D. Crichton, S. Hardman, R. Joyner, P. Ramirez and C. Mattmann. Practical Uses for a Domain Ontology. In *Proceedings of the International Conference on Ensuring Long-Term Preservation and Adding Value to Scientific and Technical Data (PV2011)*. November 15-17, 2011, Toulouse, France.
85. S. Pascoe, C. Mattmann, A. Stephens, P. Kershaw. Maximising the utility of OPeNDAP datasets through the NetCDF4 API. In *Proceedings of the Global Organization for Earth System Science Portals (GO-ESSP) Workshop*, Ashville, NC, May 10-11, 2011.
86. A. Hart, S. Kelly, D. Crichton, M. Thornquist, H. Kincaid, C. Mattmann, S. Reid, G. Warnick, P. Lin, C. Patriotis, S. Srivastava. Integrating Biospecimen Data into the EDRN Public Portal. In *Proceedings of the 2011 Annual Biospecimen Research Network (BRN) Symposium*, Bethesda, MD, March 28-29, 2011.
87. D. Jones, R. Preston, R. Navarro, K. Wagstaff, C. Mattmann, L. D'Addario, D. Thompson, W. Majid, J. Lazio. Technology Development for Large Radio Arrays at the Jet Propulsion Laboratory. *American Astronomical Society (AAS) meeting*, Boston, MA, May 22-26, 2011.
88. J. Tran, L. Cinquini, C. Mattmann, P. Zimdars, D. Cuddy, K. Leung, O. Kwoun, D. Crichton and D. Freeborn. Evaluating Cloud Computing in the NASA DESDynI Ground Data System. In *Proceedings of the ICSE 2011 Workshop on Software Engineering for Cloud Computing - SECLOUD*, Honolulu, HI, May 22, 2011.
89. A. Hart, C. Goodale, C. Mattmann, P. Zimdars, D. Crichton, P. Lean, J. Kim, and D. Waliser. A Cloud-Enabled Regional Climate Model Evaluation System. In *Proceedings of the ICSE 2011 Workshop on Software Engineering for Cloud Computing - SECLOUD*, Honolulu, HI, May 22, 2011.
90. C. Mattmann and N. Medvidovic. Domain-Specific Software Architectures for Cloud Computing. In *Proceedings of the Ground System Architectures Workshop*, Los Angeles, CA, February 28-March 3, 2011.
91. P. Lean, J. Kim, D. E. Waliser, A. Hall, C. Mattmann, S. L. Granger, K. Case, C. Goodale, A. Hart, B. Guan, N. Molotch, and S. Kaki. A Regional Climate Model Evaluation System

- based on Satellite and other Observations for Application to CMIP/AR Downscaling. *91st American Meteorological Society Annual Meeting*, Seattle, WA, Jan. 23-27, 2011.
92. D. Crichton, J. S. Hughes; C. Mattmann, E. Law and S. Hardman. Developing Software Product Lines for Science Data Systems. Abstract IN53B-1172 presented at *2010 Fall Meeting, AGU*, San Francisco, Calif., 13-17 Dec 2010.
 93. D. Crichton, C. Mattmann, A. Braverman and L. Cinquini. A Distributed, Cross-Agency Software Architecture for Sharing Climate Models and Observational Data Sets. Abstract IN42A-02 presented at *2010 Fall Meeting, AGU*, San Francisco, Calif., 13-17 Dec 2010.
 94. P. Lean, J. Kim, D. Waliser, A. Hall, C. Mattmann, S. Granger, K. Case, C. Goodale, A. Hart, P. Zimdars, B. Guan, N. Molotch, S. Kaiki. A Regional Climate Model Evaluation System based on Satellite and other Observations. Abstract GC41B-0909 presented at *2010 Fall Meeting, AGU*, San Francisco, Calif., 13-17 Dec 2010.
 95. C. Mattmann, J. Marshall, R. Downs. Packaging Software Assets for Reuse, Abstract IN53B-1170 presented at *2010 Fall Meeting, AGU*, San Francisco, Calif., 13-17 Dec 2010.
 96. S. Granger, P. Lean, J. Kim, N. Molotch, D. Waliser, R. Brakenridge, T. Stough, C. Mattmann, A. Hart, T. Farr, K. Case, S. Kaki, L. Lestak. Using Remote Sensing for Water Resource Management. Abstract H13H-03 presented at *2010 Fall Meeting, AGU*, San Francisco, Calif., 13-17 Dec 2010.
 97. L. Markides, L. Stetson, K. Zielinski, Z. Yang, C. Mattmann, R. Roshandel. On the Granularity of Markov-based Reliability Models. In *Proceedings of the 21st IEEE International Symposium on Software Reliability Engineering - Student Paper Session*, San Jose, CA, November 1-4, 2010.
 98. D. Kale, A. Hart, C. Mattmann, R. Khemani, P. Ross, P. Vee, J. Terry, R. Wetzell, D. Crichton. An Open Source, Grid-based Software Framework for Management and Sharing of Pediatric ICU Data. In *Proceedings of the 9th International Conference on Complexity in Acute Illness*. Atlanta, Georgia, September 10-12, 2010.
 99. L. Gharibans, A. Braverman, C. Mattmann, J. Garcia, D. Crichton. Networks for Analysis of Distributed Data. In *Proceedings of 2010-11 SAMSI Program on Complex Networks*, Research Triangle Park, NC, August 29-September 1, 2010.
 100. C. Mattmann, R. R. Downs, J. J. Marshall, N. F. Most. Reuse Tools to Help Enable Climate Research in NASA Missions. In *Proceedings of the 2010 Summer ESIP Federation Meeting*, Knoxville, TN, July 17-23, 2010.
 101. R. R. Downs, N. F. Most, J. J. Marshall, C. Mattmann. Tools for Reusing Earth Science Software. In *Proceedings of the 2010 Earth and Space Science Informatics (ESSI) Workshop*, Fairfax, VA, August 2-4, 2010.
 102. C. Mattmann, D. Kale, D. Crichton, A. Hart, P. Vee, R. Kumani, A. Braverman, H. Kincaid, R. Wetzell, R. Kaptan, D. Hallman. Distributed, Modular Grid Software for Data Management and Exploration of Patient-Centric Healthcare IT Information. In *Proceedings of the O'Reilly Open Source Convention (OSCON) - Special Session on Healthcare Technology*, Portland, OR, July 19-23, 2010.
 103. J. J. Marshall, R. Downs, C. Mattmann. Progress Towards a NASA Earth Science Reuse Enablement System (RES). In *Proceedings of the 11th IEEE International Conference on Information Reuse and Integration (IRI 2010)*, Las Vegas, NV, August 4-6, 2010.
 104. D. Woollard, C. Mattmann, D. Popescu, N. Medvidovic. KADRE: Domain-Specific Architectural Recovery For Scientific Software Systems. In *Proceedings of the 25th IEEE/ACM International Conference on Automated Software Engineering (ASE)*, pp. 325-328, Antwerp, Belgium, September 20-24, 2010.

105. T.S. Mohan, N. Medvidovic, C. Mattmann. Leveraging Domain-Specific Software Architectures for Classifying Cloud Service Abstractions. In *Proceedings of the Cloud Futures 2010: Advancing Research with Cloud Computing Workshop*, Redmond, WA, April 8-9, 2010.
106. C. Mattmann, R. R. Downs, J. J. Marshall, S. Samadi. Software Reuse for Environmental Decision-Making. In *Proceedings of the 2009 Winter ESIP Federation Meeting*, Washington, D.C., January 2009.
107. C. Mattmann, R. R. Downs, J. J. Marshall, S. Samadi. Reuse of Software Assets for the NASA Earth Science Decadal Survey Missions. In *Proceedings of the IEEE Geoscience and Remote Sensing Symposium (IGARSS)*, pp. 1687-1690, Honolulu, HI, July 25-30, 2010.
108. O. Kwoun, D. Cuddy, K. Leung, D. Crichton, C. Mattmann, and D. Freeborn. A Science Data System Approach for the DESDynI Mission. In *Proceedings of IEEE Radar*, pp. 1265-1269, Washington, D.C., May 10-14, 2010.
109. C. Mattmann, A. Braverman, D. Crichton and, D. Williams. An Architecture and Analysis Environment for Model to Observational Data Intercomparisons, *Eos*, Vol. 90, Number 52, 29 December 2009, Fall Meet. Suppl., Abstract IN13B-1083.
110. J. S. Hughes, D. Crichton, S. Hardman, C. Mattmann, and P. Ramirez. Enabling Interoperability – Supporting a Diversity of Search Paradigms Using Shared Ontologies and Federated Registries. *Eos*, Vol. 90, Number 52, 29 December 2009, Fall Meet. Suppl., Abstract IN51B-1037.
111. A. Braverman, S. Granger and C. Mattmann. Service-oriented Architectures and Statistics for Water Resource Analysis. To appear in *Proceedings of the 58th Session of the International Statistical Institute*, Dublin, Ireland, August 21-26th, 2011.
112. A. Braverman, D. Crichton, C. Mattmann, R. Raskin and M. Gunson. The Climate Data eXchange: Bringing NASAs Observational Data to the IPCC Community. In *Proceedings of the Workshop on Global Organization for Earth System Science Portals (GO-ESSP)*, Hamburg, Germany, October 5-9, 2009.
113. D. Woollard, C. Mattmann, A. Braverman, R. Raskin, D. Crichton. Enabling Climate Scientists to Access Observational Data. In *Proceedings of the OOPSLA 1st International Workshop on Software Research and Climate Change*. Orlando, FL, October 26, 2009.
114. C. Mattmann, D. Crichton, A. Braverman, D. Williams, M. Gunson, D. Woollard, S. Kelly and M. Cayan. A Distributed Computing Infrastructure for the Evaluation of Climate Models using NASA Observational Data. In *Proceedings of the IEEE ICDM Workshop on Knowledge Discovery from Climate Data*, pp. 231-232, Miami, FL, December 6th, 2009.
115. C. Mattmann, J. Garcia, I. Krka, D. Popescu and N. Medvidovic. The Anatomy and Physiology of the Grid Revisited. In *Proceedings of the Joint Working IEEE/IFIP Conference on Software Architecture & European Conference on Software Architecture*, pp. 285-288, Cambridge, UK, September 14-17, 2009.
116. A. Bingham, C. Thompson, T. Stough, M. Henderson, L. Pan, and C. Mattmann. Data Tools and Services at Physical Oceanography DAAC. In *Proceedings of OceanObs09*, Venice, Italy, September 21st-25th, 2009. Paper available at: http://www.oceanobs09.net/ac/AbstractBook_OceanObs09.pdf.
117. C. Mattmann, J. Tran, H. Kincaid, D. Crichton, A. Hart, K. Anton, J. Dahlgren, M. Thornquist, D. Stelling, S. Reid, C. Patriotis, and S. Srivastava. The eCAS Model for Scientific Data Warehousing of Biomarker Data. In *Proceedings of the 6th EDRN Scientific Workshop*, August 2009. Bethesda MD.
118. H. Kincaid, A. Hart, K. Anton, C. Patriotis, M. Thornquist, J. Dahlgren, C. Mattmann, D. Crichton and J. Tran. Curation of EDRN Cancer Biomarker Research. In *Proceedings of the 6th EDRN Scientific Workshop*, August 2009. Bethesda MD.

119. D. Crichton, M. Thornquist, S. Kelly, A. Hart, H. Kincaid, C. Mattmann, J. Dahlgren, K. Anton, D. Stelling, G. Warnick, S. Reid, C. Edelstein, J. Tran, C. Patriotis, and S. Srivastava. Providing Integrated Access to Scientific Information and Knowledge in Cancer Biomarker Research. In *Proceedings of the 6th EDRN Scientific Workshop*, August 2009. Bethesda MD.
120. A. Hart, C. Mattmann, J. Tran, D. Crichton, H. Kincaid, J. S. Hughes, S. Kelly, K. Anton, D. Johnsey, C. Patriotis. Enabling Effective Curation of Cancer Biomarker Research Data. In *Proceedings of the 22nd IEEE International Symposium on Computer-Based Medical Systems (CBMS)*, Albuquerque, NM, August 3rd-4th, 2009.
121. J. S. Hughes, D. Crichton and C. Mattmann. Ontology-Based Information Model Development for Science Information Reuse and Integration. In *Proceedings of the 2009 IEEE International Conference on Information Reuse and Integration (IEEE IRI-09)*, pp. 79-84, Las Vegas, NV, August 10th-12th, 2009.
122. W. Franklin, D. Crichton, M. Reid, C. Mattmann, A. Hart, D. Deng, P. Chesnut, B. Logue, J. Hayes, D. Stelling, M. Varella-Garcia, T. E. Kennedy, Y. E. Miller. A Distributed Bronchial Mapping Software Tool for the Tracking of Cellular, Molecular and Imaging Results in the Central Airways. In *Proceedings of the 13th IASLC World Conference on Lung Cancer*, San Francisco, CA, July 31st-August 4th, 2009.
123. S. McCleese, C. Mattmann, R. Raskin, D. Crichton, and S. Hardman. A Virtual Oceanographic Data Center. In *Proceedings of the 18th ACM/IEEE International World Wide Web Conference (WWW2009) – Developers Track*, pp. 38-39, Madrid, Spain, April 20th-24th, 2009.
124. J. S. Hughes, D. Crichton, and C. Mattmann. Scientific Digital Libraries, Interoperability, and Ontologies. In *Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL 2009)*, pp. 399-400, Austin, TX, June 15-19, 2009.
125. D. Woollard, C. Mattmann, and N. Medvidovic. Injecting Software Architectural Constraints into Legacy Scientific Applications. In *Proceedings of the ICSE 2009 Workshop on Software Engineering for Computational Science and Engineering*, pp. 65-71, Vancouver, Canada, May 23, 2009.
126. J. S. Hughes, D. Crichton and C. Mattmann. A Framework to Manage Information Models - The Planetary Data System Case Study. In *Proceedings of the 40th Lunar and Planetary Science Conference*, the Woodlands, Texas, March 23-27, 2009.
127. C. Mattmann, D. Freeborn, D. Crichton, B. Foster, A. Hart, D. Woollard, S. Hardman, P. Ramirez, S. Kelly, A. Y. Chang, C. E. Miller. A Reusable Process Control System Framework for the Orbiting Carbon Observatory and NPP Sounder PEATE missions. In *Proceedings of the 3rd IEEE Intl Conference on Space Mission Challenges for Information Technology (SMC-IT 2009)*, pp. 165-172, July 19 - 23, 2009.
128. A. Hart, J. Tran, D. Crichton, K. Anton, H. Kincaid, S. Kelly, J. S. Hughes and C. Mattmann. An Extensible Biomarker Curation Approach and Software Infrastructure for the Early Detection of Cancer. In *Proceedings of the IEEE Intl. Conference on Health Informatics*, pp. 387-392, Porto, Portugal, January 14-17, 2009.
129. D. Crichton, C. Mattmann, A. Braverman. Facilitating Climate Modeling Research and Analysis via the Climate Data eXchange. In *Proceedings of the Workshop on Global Organization for Earth System Science Portals (GO-ESSP)*, Seattle, WA, 2008.
130. D. Crichton, P. Ramirez, C. Mattmann and J. S. Hughes. A Model Driven Architecture for Highly Distributed, Data Intensive Systems. In *Proceedings of the DARPA Workshop on Digital Object Storage and Retrieval (DOSR)*, Chantilly, Virginia, July 15-16, 2008.
131. C. Mattmann, R. Raskin, D. Crichton. A Service Oriented Architecture for Highly Distributed and Data-Intensive Geospatial Grid Software Systems. In *Proceedings of the GIScience 2008 Workshop on Design of Service-Oriented Architecture (SOA) for Geospatial Science*, Park City, UT, 2008.

132. J. S. Hughes, D. Crichton, C. Mattmann. An Ontology-Based Archive Information Model for the Planetary Science Community. In *Proceedings of the 10th International Conference on Space Operations (SpaceOps2008)*, AIAA Press, Heidelberg, Germany, May 12-16, 2008.
133. A. Hart, D. Crichton, D. Johnsey, C. Mattmann, C. Patriotis, H. Kincaid, S. Srivastava, M. Thornquist. A Web-based Data Management Infrastructure for Curation, Annotation and Dissemination of Biomarker Research results for the Early Detection of Cancer. In *Proceedings of the 5th EDRN Scientific Workshop*, Bethesda, MD, March 17-19, 2008.
134. D. Crichton, M. Thornquist, S. Kelly, C. Mattmann, D. Johnsey, J. Dahlgren, D. Steling, G. Warnick, S. Reid, C. Edelstein, A. Hart, H. Kincaid. A Distributed Informatics Knowledge Environment for Biomarker Research. In *Proceedings of the 5th EDRN Scientific Workshop*, Bethesda, MD, March 17-19, 2008.
135. J. S. Hughes, D. Stelling, D. Crichton, C. Mattmann, G. Warnick, S. Reid. An Information Model for Biomarker Research. In *Proceedings of the 5th EDRN Scientific Workshop*, Bethesda, MD, March 17-19, 2008.
136. C. Mattmann, M. Khilkin, W. Rom, D. Crichton, S. Kelly, P. Rivera, J. Ko, B. Phalan, S. Sotero, E. Eylers. A Reusable Web-based CAT (CT) scan data management system for temporally characterizing Solid Nodules and Ground Glass Opacities in Lung Cancer patients. In *Proceedings of the 5th EDRN Scientific Workshop*, Bethesda, MD, March 17-19, 2008.
137. W. Franklin, D. Crichton, M. Reid, C. Mattmann, A. Hart, D. Deng, B. Logue, J. Hayes, D. Stelling. A Distributed Biomarker Atlas for Lung Research aiding the Discovery and Early Detection of Cancer Biomarkers. In *Proceedings of the 5th EDRN Scientific Workshop*, Bethesda, MD, March 17-19, 2008.
138. C. Mattmann, D. Woollard, N. Medvidovic. Exploiting Connector Knowledge to Efficiently Disseminate Highly Voluminous Data Sets. In *Proceedings of the ICSE 2008 Workshop on SHaring and Reusing architectural Knowledge - SHARK 2008*, pp. 37-40, Leipzig, Germany, May 10-18, 2008.
139. M. Khilkin, C. Mattmann, P. Rivera, J. Koh, B. Phalan, E. Eylers, S. Kelly, D. Crichton and W. N. Rom. Integrating clinical, CT and PFT patient information in a database to determine a follow-up CT interval and the malignant potential of solid and ground glass pulmonary nodules. In *Proceedings of American Thoracic Society (ATS)*, Toronto, Ontario, Canada, May 16-21, 2008.
140. M. Khilkin, C. Mattmann, P. Rivera, J. Koh, B. Phalan, E. Eylers, S. Kelly, D. Crichton and W. N. Rom. An integrated clinical, CT, PFT database to better define an at risk population to screen for lung cancer. In *Proceedings of American Thoracic Society (ATS)*, Toronto, Ontario, Canada, May 16-21, 2008.
141. C. Mattmann, V. Perrone, S. Kelly, D. Crichton, A. Finkelstein, and N. Medvidovic. A Reference Framework for Requirements and Architecture in Biomedical Grid Systems. In *Proceedings of the 2007 IEEE International Conference on Information Reuse and Integration (IEEE IRI-07)*, pp. 418-423, Las Vegas, NV, August 13-15, 2007.
142. C. Mattmann, D. Woollard, N. Medvidovic, R. Mahjourian. Software Connector Classification and Selection for Data-intensive Systems. In *Proceedings of the ICSE 2007 Workshop on Incorporating COTS Software into Software Systems: Tools and Techniques (IWICSS)*, Minneapolis, MN, May 22, 2007.
143. J. Bhuta, C. Mattmann, N. Medvidovic, and B. Boehm. A Framework for the Assessment and Selection of Software Components and Connectors in COTS-based Architectures. In *Proceedings of the 6th IEEE/IFIP Working Conference on Software Architecture (WICSA2007)*, pg. 6, Mumbai, India, January 6th-9th, 2007.
144. D. Crichton, S. Kelly, C. Mattmann, Q. Xiao, J. S. Hughes, J. Oh, M. Thornquist, D. Johnsey, S. Srivastava, L. Esserman, B. Bigbee. A Distributed Information Services Architecture to Support Biomarker Discovery in Early Detection of Cancer. In *Proceedings of the 2nd IEEE*

- International Conference on e-Science and Grid Computing*, pp. 44, Amsterdam, the Netherlands, December 4th- 6th, 2006.
145. C. Mattmann. Software Connectors for Highly Distributed and Voluminous Data-intensive Systems. In *Proceedings of the Doctoral Symposium at the 21st IEEE/ACM International Conference on Automated Software Engineering (ASE06)*, pp. 331-334, Tokyo, Japan, September 18-22, 2006.
 146. J. S. Hughes, D. Crichton, P. Ramirez and C. Mattmann. Data Model Management for Space Information Systems. In *Proceedings of the 9th International Conference on Space Operations (SpaceOps2006)*, AIAA Press, Rome, Italy, June 2006.
 147. C. Mattmann, D. Crichton, J. S. Hughes, P. Ramirez and D. Berrios. A Reference Architecture for Space Information Management. In *Proceedings of the 9th International Conference on Space Operations (SpaceOps2006)*, AIAA Press, Rome, Italy, June 2006.
 148. C. Mattmann, D. Crichton, N. Medvidovic and S. Hughes. A Software Architecture-Based Framework for Highly Distributed and Data Intensive Scientific Applications. In *Proceedings of the 28th International Conference on Software Engineering (ICSE06), Software Engineering Achievements Track*, pp. 721-730, Shanghai, China, May 20th-28th, 2006.
 149. C. Mattmann, D. Crichton, J. S. Hughes, S. Kelly, S. Hardman, R. Joyner and P. Ramirez. A Classification and Evaluation of Data Movement Technologies for the Delivery of Highly Voluminous Scientific Data Products. In *Proceedings of the NASA/IEEE Conference on Mass Storage Systems and Technologies (MSST2006)*, pp. 131-135, College Park, Maryland, May 15-18, 2006.
 150. N. Medvidovic and C. Mattmann. The GridLite DREAM: Bringing the Grid to Your Pocket. In *Proceedings of the Monterey Workshop on Networked Systems*, Irvine, CA, September, 2005. Invited to submit an extended and revised version of this paper to a special issue of Springer Lecture Notes on Computer Science in May 2006.
 151. J. Steven Hughes, D. Crichton, S. Kelly and C. Mattmann. The Semantic Planetary Data System. In *Proceedings of the 3rd Symposium on Ensuring Long-term Preservation and Adding Value to Scientific and Technical Data (PV-2005)*, The Royal Society, Edinburgh, UK, November 21-23, 2005.
 152. S. Banerjee, C. Mattmann, N. Medvidovic, and L. Golubchik. Leveraging Architectural Models to Inject Trust into Software Systems. In *Proceedings of the ICSE 2005 Workshop on Software Engineering for Secure Systems – Building Trustworthy Applications (SESS05)*, St. Louis, Missouri, May 15th-16th, 2005.
 153. C. Mattmann, N. Medvidovic, P. Ramirez and V. Jakobac. Unlocking the Grid. In *Proceedings of the 8th ACM SIGSOFT International Symposium on Component-based Software Engineering (CBSE8)*, pp. 322-336. LNCS 3489, G. Heineman (Eds), Springer Verlag, St. Louis, Missouri, May 14th-15th, 2005.
 154. C. Mattmann, S. Malek, N. Beckman, M. Mikic-Rakic, N. Medvidovic and D. Crichton. GLIDE: A Grid-based, Lightweight, Infrastructure for Data-intensive Environments. In *Proceedings of the European Grid Conference (EGC2005)*, pp. 68-77. LNCS 3470, P. M. A. Sloot, A. G. Hoekstra, T. Priol, A. Reinfield, M. Bubak (Eds), Springer Verlag, Amsterdam, The Netherlands, February 14-16, 2005.
<https://github.com/chrismattmann/glide>
 155. P. Ramirez and C. Mattmann. ACE: Improving Search Engines via Automatic Concept Extraction. In *Proceedings of the 2004 IEEE International Conference on Information Reuse and Integration (IEEE IRI-2004)*, pp. 229-234. Las Vegas, NV, November 8th-10th, 2004.
<https://github.com/chrismattmann/ace>
 156. R. Raskin, M. Pan and C. Mattmann. Enabling Semantic Interoperability for Earth Science Data. *4th Annual NASA Earth Science Technology Conference (ESTC-2004)*. Palo Alto, CA,

June 22nd- 24th, 2004. Paper available at:
<http://esto.nasa.gov/conferences/estc2004/papers/a5p1.pdf>

157. J. Steven Hughes, D. Crichton, S. Kelly, C. Mattmann, R. Joyner, J. Wilf and J. Crichton. A Planetary Data System for the 2006 Mars Reconnaissance Orbiter Era and Beyond. In *Proceedings of the 2nd ESA Symposium on Ensuring the Long Term Preservation and Adding Value to Scientific and Technical Data (PV-2004)*. Frascati, Italy, October 5-7, 2004.
158. C. Mattmann, D. Crichton, J.S. Hughes, S. Kelly and P. Ramirez. Software Architecture for Large-scale, Distributed, Data-Intensive Systems. In *Proceedings of the 4th IEEE/IFIP Working Conference on Software Architecture (WICSA-4)*, pp. 255-264. Oslo, Norway, June 12th-15th, 2004.
159. C. Mattmann, P. Ramirez, D. Crichton and J.S. Hughes. Packaging Data Products using Data Grid Middleware for Deep Space Mission Systems. In *Proceedings of the 8th International Conference on Space Operations (Spaceops-2004)*, AIAA Press. Montreal, Canada, May 2004.
160. C. Mattmann, D. Freeborn and D. Crichton. Towards a Distributed Information Architecture for Avionics Data. In *Proceedings of the 2nd IADIS International Conference WWW/Internet*, Vol II, pp. 829-832. Algarve, Portugal, November, 2003.
161. C. Mattmann and B. Shaw. Adding Meta-Architectural Understanding to Resource Aware Software Architectures Requiring Device Synchronization. In *Proceedings of the 2nd IADIS International Conference WWW/Internet*, Vol. II, pp. 1265-1266. Algarve, Portugal, November, 2003.
162. S. Mandutianu, S. Hardman and C. Mattmann. DIRAC: A Framework for Coordination and Cooperation. Poster Session. *ACM/IFIP/USENIX International Middleware Conference*. Rio de Janeiro, Brazil, 2003.

Technical Reports

1. C. Mattmann, M. Kimes, S. Berndt, B. Neurnburger, M. Milano. Welcome to our Metaverse. NASA New Technology Report (NTR) NPO-52521, October 2022.
2. C. Mattmann, P. Southam, M. Milano, R. Stonebraker, A. Mensikova, V. Constantinou, M. Milano. A Cloud-based Internet-scale open format observatory. NASA New Technology Report (NTR) NPO-52520, October 2022.
3. S. Dafttry, F. Chen, A. Didier, D. Atha, R. Swan, C. Mattmann, H. Ono. SULU: Scalable and Distributed Machine Learning Framework based on a Unified Encoder. NASA New Technology Report (NTR) NPO-51777, October 2020.
4. C. Mattmann, P. Ramirez, L. McGibbney, A. Mishra, S. Shah, K. Hundman, R. Tapella, M. Joyce, W. Burke, G. Totaro. MEMEX: A Multimedia Focused Domain Discovery and Search Tool. NASA New Technology Report (NTR) NPO-51054, November 2018.
5. C. Mattmann, A. Didier, A. Mishra, W. Burke, H. Venkataram, S. Cheng. T-ENTacle (Table ENTity extraCTION tooL Environment): A Semi-Supervised Approach for Extracting the Entities and Their Relationships. NASA New Technology Report (NTR) NPO-51053, November 2018.
6. C. Mattmann, S. Shah and B. Wilson. MARVIN: An Open Machine Learning Corpus and Environment for Automated Machine Learning Primitive Annotation and Execution. July 14th, 2018.
<https://arxiv.org/abs/1808.03753>
7. C. Mattmann and M. Sharan. Scalable Pooled Time Series of Big Video Data from the Deep Web. October 2016.
doi:arXiv:1610.06669
<https://arxiv.org/abs/1610.06669>

8. J. Hong, C. Mattmann, P. Ramirez. Ensemble Maximum Entropy Classification and Linear Regression for Author Age Prediction. October 2016.
doi:arXiv:1610.00852
<https://arxiv.org/abs/1610.00852>
9. C. Mattmann, P. Ramirez, L. McGibbney, A. Pope, J. Wyngaard. Report on NSF DataViz Hackathon for Polar CyberInfrastructure. The New School, pp. 22, New York, NY June 2015.
10. C. Mattmann, P. Ramirez, M. Joyce, S. Khudikyan, M. Boustani, R. Verma, L. McGibbney, T. Palsulich. DRAT: A Distributed Release Audit Tool. NASA New Technology Report (NTR) NPO-49562, 2014.
<http://goo.gl/uQf7pX>
11. C. Mattmann, T. Painter, P. Ramirez, C. Goodale, A. Hart, M. Boustani, S. Khudikyan, R. Verma, D. Berisford, M. Richardson, P. Zimdars, J. Horn, S. Neely, S. Feeny. Near Real Time Processing of Airborne Snow Observatory (ASO) data. NASA New Technology Report (NTR) NPO-49459, 2014.
12. C. Mattmann, D. Waliser, J. Kim. Developing The Technical Capabilities Of A Regional Climate Model Evaluation System to Support the NCA Process. Submitted to the 2013 US National Climate Assessment Technical Inputs, March 1, 2012.
13. D. Waliser, J. Kim, C. Mattmann, L. Mearns. Regional Climate Model Evaluation: A Critical Component of the Scientific Basis and Decision Support Elements of the NCA. Submitted to the 2013 US National Climate Assessment Technical Inputs, March 1, 2012.
14. R. Roshandel, L. Markides, L. Stetson, Z. Yang, C. Mattmann, K. Zielinski. Toward Reliability Analysis for Software Product Families. Technical Report, SU-CSSE-2010-1. Computer Science and Software Engineering, Seattle University, April 2010.
15. C. Mattmann, B. Foster, A. Y. Chang, P. Ramirez, D. Freeborn, D. Woollard, D. Crichton. A Framework for Rapidly Integrating Science Data Processing Algorithms into Process Control Systems. NASA New Technology Report (NTR) NPO-47160, 2009.
16. C. Mattmann, J. Garcia, I. Krka, D. Popescu and N. Medvidovic. The Anatomy and Physiology of the Grid Revisited. Technical Report, USC-CSSE-2008-820. Center for Software Engineering, University of Southern California, October 2008.
17. C. Mattman, B. Foster, A. Chang, D. Crichton, D. Freeborn, D. Woollard. A Generic, Extensible, Configurable Push Pull Framework for Large Scale Science Missions. NASA New Technology Report (NTR) NPO-46185, 2008.
18. C. Mattmann, D. Freeborn, D. Crichton, J. S. Hughes, P. Ramirez, S. Hardman, D. Woollard, and S. Kelly. Refining and Improving the OODT Catalog and Archive Service via Agile Component Refactoring. NASA New Technology Report (NTR) NPO-44883, 2007.
19. V. Perrone, C. Mattmann, S. Kelly, D. Crichton, A. Finkelstein, and N. Medvidovic. A Reference Framework for Requirements and Architecture in Biomedical Grid Systems. Technical Report, USC-CSE-2007-706. Center for Software Engineering, University of Southern California, March 2007.
20. D. Woollard, C. Mattmann, and N. Medvidovic. Injecting Software Architectural Constraints into Legacy Scientific Applications. Technical Report, USC-CSE-2007-701. Center for Software Engineering, University of Southern California, January 2007.
21. J. Bhuta, C. Mattmann, N. Medvidovic, and B. Boehm. A Framework for the Assessment and Selection of Software Components and Connectors in COTS-based Architectures. Technical Report, USC-CSE-2006-615. Center for Software Engineering, University of Southern California, September 2006.
22. C. Mattmann. Software Connectors for Highly Distributed and Voluminous Data-intensive Systems. Technical Report (Qualifying Exam Report), USC-CSE-2006-600, 2006.

23. C. Mattmann, N. Medvidovic, P. Ramirez and V. Jakobac. Unlocking the Grid. Technical Report, USC-CSE-2004-512. Center for Software Engineering, University of Southern California, December 2004.
24. C. Mattmann, S. Malek, N. Beckman, M. Mikic-Rakic, N. Medvidovic and D. Crichton. GLIDE: A Grid-based, Lightweight, Infrastructure for Data-intensive Environments. Technical Report, USC- CSE-2004-509. Center for Software Engineering, University of Southern California, August 2004.
25. C. Mattmann and P. Ramirez. A Comparison and Evaluation of Architecture Recovery in Data-Intensive Systems using Focus. Technical Report, USC-CSE-2004-507. Center for Software Engineering, University of Southern California, May 2004.
26. C. Mattmann and P. Ramirez. Intelligent Coordinates: A Case Study in Improving Simulated Annealing in the Bin-Packing Domain. Technical Report, USC-03-798. Department of Computer Science, University of Southern California, September 2003.

Review Articles

1. C. Mattmann. Review of: Big Data's Big Unintended Consequences. *ACM Computing Reviews*. Review #: CR154930, September 2013.
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**

1. 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
2. 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

Completed

1. 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
2. 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
3. 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
4. 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
5. 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

6. 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
7. 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
8. 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
9. 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>

10. 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
11. 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
12. 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
13. 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

14. 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
15. 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
16. 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
17. 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
18. 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
19. 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
20. 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
21. 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
22. 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
23. 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

24. 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
25. 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>
26. 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
27. 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

28. 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
29. 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
30. 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
31. 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

32. 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
33. 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
34. 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
35. 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
36. 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
37. 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
38. 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

39. 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
40. 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
41. 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
42. 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
43. 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
44. 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

45. 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

46. 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. 2009 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=xPD41PypSXQ>
<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 break-out 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/XS1Szh>
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, Atlanta, GA, November 5, 2010.
96. *Scientific data curation and processing with Apache Tika.* C. Mattmann. ApacheCon NA 2010 - Lucene and friends Track, Atlanta, 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. Crichton 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. Crichton, 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. Cayan. 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 the American 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 the American 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 (JOBDD), 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. NASA Small Business Innovation Research/Small Business Technology Transfer (SBIR/SBTT) Phase II Proposal Reviewer, March 2021.
2. NASA Small Business Innovation Research/Small Business Technology Transfer (SBIR/SBTT) Phase II Proposal Reviewer, March 2020.
3. JPL Office of the Chief Scientist & Chief Technologist Topical R&TD review, March 2020.
4. National Science Foundation (NSF), Proposal Review, October 2019.
5. National Science Foundation (NSF), Proposal Review, September 2019.
6. The Fund for Scientific Research FNRS, Brussels, Belgium, September 2019.
7. National Science Foundation (NSF), Proposal Review, June 2019.
8. JPL Office of the Chief Scientist & Chief Technologist Topical R&TD review, May 2019.
9. NASA Small Business Innovation Research/Small Business Technology Transfer (SBIR/SBTT) Phase I Proposal Reviewer, April 2019.
10. National Science Foundation (NSF), Panel Review, April 2019.
11. NASA Jet Propulsion Laboratory (JPL) Data Science Pilot Reviews, FY19, December 2018.
12. JPL Space Technology Office JPL NEXT review, November 2018.
13. National Science Foundation (NSF), Proposal Review, November 2018.
14. JPL Office of the Chief Scientist & Chief Technologist Strategic R&TD review, July 2017.
15. The Fund for Scientific Research FNRS, Brussels, Belgium, May 2017.
16. National Science Foundation (NSF), Panel Review, April 2017.
17. The Fund for Scientific Research FNRS, Brussels, Belgium, April 2017.
18. NASA Jet Propulsion Laboratory (JPL), Summer Undergraduate Research Fellowship (SURF) Review Panel, April 2017.
19. National Aeronautics and Space Administration (NASA), Panel Review, April 2017.
20. National Science Foundation (NSF), Panel Review, August 2016.
21. National Science Foundation (NSF), Panel Review, April 2016.
22. National Science Foundation (NSF), Proposal Review, February 2016.
23. National Science Foundation (NSF), Proposal Review, November 2015.
24. NASA Jet Propulsion Laboratory (JPL), Spontaneous Concept R&TD proposal review, November 2015.
25. The Fund for Scientific Research FNRS, Brussels, Belgium, October 2015.
26. 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.
27. National Science Foundation (NSF), Proposal Review, June 2015.
28. National Science Foundation (NSF), Proposal Review, June 2015.
29. NASA Jet Propulsion Laboratory (JPL), Topic Area R&TD proposal review, June 2015.
30. National Science Foundation (NSF), Panel Review, March 2015.
31. National Science Foundation (NSF), Proposal Review, January 2015.

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

| | |
|---------------------------|---|
| PROFESSIONAL ASSOCIATIONS | <p>Executive Board Member (Asst. Treasurer), La Canada Gladiators Youth Football</p> <p>Senior Member, Institute of Electrical and Electronics Engineers, Inc. (IEEE)</p> <p>Member, ACM Special Interest Group on Information Retrieval (SIGIR)</p> <p>Member, American Astronomical Society (AAS)</p> <p>Member, Foundation for Earth Science (ESIP)</p> <p>Member, IEEE Geoscience and Remote Sensing Society (GRSS-IEEE)</p> <p>Member, Apache Software Foundation (ASF)</p> <p>Member, Open Geospatial Consortium (Voting Member, Geo API WG)</p> <p>Member, ACM Special Interest Group on Software Engineering (SIGSOFT)</p> <p>Participant (via JPL), Consultative Committee on Space Data Systems (CCSDS)</p> |
| COMPUTER SKILLS | <ul style="list-style-type: none"> • Languages: Java, C/C++, Perl, Python, SQL, XML, HTML, JavaScript, VBScript, ASP, JSP, PHP • Applications: L^AT_EX, 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 |
| CITIZENSHIP | United States Citizen |