Alark Joshi

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University of San Francisco

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EDUCATION

Ph.D. Computer Science, University of Maryland Baltimore County, MD, 2007

M.S. Computer Science, University of Minnesota, MN, 2001

B.S. Computer Engineering, PICT, University of Pune, India, 1999

APPOINTMENTS

2013– **University of San Francisco**
Department Chair, Department of Computer Science, 2020–23
Associate Professor, Department of Computer Science, 2016–
Assistant Professor, Department of Computer Science, 2013–16

2010–12 **Boise State University**
Assistant Professor, Department of Computer Science, 2011–13

2008–10 **Yale University**
Postdoctoral Associate, Department of Biomedical Engineering and Diagnostic Radiology

RESEARCH AREAS

Visualization Literacy - Helping individuals develop a critical approach to reading visualizations to mitigate the spread of misinformation through charts

Collaborative Data Exploration - Exploring data collaboratively to provide provenance and to incorporate accountability for decision-making

Mobile Data Visualization - Identifying ways to provide context cues for data when explored on a mobile device

GRANTS

2023–27 Collaborative Research: CISE: Large: The Lifelong Visualization Literacy Project ($5M). National Science Foundation, Senior Personnel. (under review)

2019–24 Community Engaged Scholars In Computer Science ($650,000). National Science Foundation S-STEM Program, Co-PI.

2017–18 CI-P: Toward Brain-Computer Interfaces that Adapt to User Cognitive State ($82,738), National Science Foundation (Division Of Computer and Network Systems), Co-PI.

2014–19 CS 10K: IDoCode: A Sustainable Model for Computer Science in Idaho High Schools, ($992,067). NSF Computing Education for the 21st Century. PI (transitioned to Co-PI due to the move to USF).

2016 CS4HS - Building a sustained community of practice using Mobile CSP ($34,500). Google Computer Science for High School Initiative. Co-PI with Dave Wolber.

2016 GirlTechPower - A workshop for middle-school and high-school girls in San Francisco ($16,000). SanDisk Corporation, PI.

2015 GirlTechPower - A workshop for high-school girls in San Francisco ($24,000). AT&T, PI.

2013 Computational Thinking: An Introduction to Programming and Data Analysis ($14,500). Google Computer Science for High School Initiative, PI.

2012 Badges for Personalized Science Learning in 3D GameLab ($150,000). HASTAC/MacArthur Foundation, Co-PI.

2012 Context-providing techniques for visualization of scientific simulations ($20,075). Idaho National Labs Faculty Staff Exchange Initiative, PI.

2011 Instant Gratification: Interactive Learning Tools to Engage Students through Computer Science ($15,000). Google Computer Science for High School Initiative, PI.

BOOKS AND BOOK CHAPTERS

Books

2009 Xenophon Papademetris and Alark Joshi, *Introduction to Programming for Image Analysis with VTK*, 2nd Edition, 283 pages, November 2009.

2008 Alark Joshi, *Art-inspired Techniques for Visualizing Time-varying Data*, VDM Verlag, 228 pages, 2008.

Book Chapters

2021 Tom Horak, Wolfgang Aigner, Matthew Brehmer, **Alark Joshi**, and Christian Tominski, "Responsive Visualization Design for Mobile Devices," In *Mobile Data Visualization*, CRC Press, December 2021.

2021 Jo Vermeulen, Christopher Collins, Raimund Dachselt, Pourang Irani, and **Alark Joshi**, "Reflections on Ubiquitous Visualization ," In *Mobile Data Visualization*, CRC Press, December 2021.

2020 Bernhard Preim and **Alark Joshi**, "Evaluation of visualization systems with long-term case studies." In *Foundations of Data Visualization*, pp. 195-208. Springer, Cham, 2020.

PUBLICATIONS

Journal Articles

2023 Kaustubh Odak, Tanusri Bhowmick, Yash Sonar, Hussain Burhanuddin, **Alark Joshi**, " VisPrac: Provenance for Collaborative Data Exploration," IEEE Visualization 2023, Short Papers Track, 2023 (under review).

2023 Elif E. Firat, Colm Lang, Bhumika Srinivas, Robert S. Laramee, **Alark Joshi**. "A Constructivism-based Approach to Treemap Literacy in the Classroom," In Computer Graphics Forum (CGF), vol. 42, no. 2., 2023.

2022 Daniel Barajas, Xornam Apedoe, David Guy Brizan, **Alark Joshi**, Sophie Engle. "Lessons Learned from Quantitatively Exploring Visualization Rubric Utilization for Peer Feedback," IEEE Computer Graphics and Applications, 2022.

2022 Ilena Peng, Elif E. Firat, Robert S. Laramee, **Alark Joshi**, "Evaluating the Impact of Mastery Learning on Parallel Coordinates Literacy," In Computer Graphics Forum (CGF), vol. 41, no. 2., 2022.

2022 Elif E. Firat, **Alark Joshi**, and Robert S. Laramee. "VisLitE: Visualization Literacy and Evaluation." IEEE Computer Graphics and Applications 42, no. 3 (2022): 99-107.

2022 Elif E. Firat, **Alark Joshi**, Robert S. Laramee, "Interactive Visualization Literacy: The State-of-the-Art," Information Visualization, February 2022.

2019 **Alark Joshi**, Phan Luu, Don M. Tucker, and Steven Duane Shofner. "Leveraging Models of Human Reasoning to Identify EEG Electrodes in Images With Neural Networks." In Optoelectronics in Machine Vision-Based Theories and Applications, pp. 106-133. IGI Global, 2019.

2018 Helen Chen, Sophie Engle, **Alark Joshi**, Eric Ragan, Beste Yuksel, Lane Harrison, "Using Animation to Alleviate Overdraw in Multiclass Scatterplot Matrices," In Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems, p. 417. ACM, 2018.

2017 Sophie Engle, Sean Whalen, **Alark Joshi**, and Katherine S. Pollard. "Unboxing cluster heatmaps." BMC bioinformatics 18, no. 2 (2017): 63.

2016 Susan Mason, Don Holley, Aaron Wells, Amit Jain, Thomas Wuerzer, **Alark Joshi**, "An experiment-based methodology to understand the dynamics of group decision making." Socio-Economic Planning Sciences(56), 14-26, 2016.

2016 Alexander S. Rattner, Donna Post Guillen, **Alark Joshi**, and Srinivas Garimella. "Framework and algorithms for illustrative visualizations of time-varying flows on unstructured meshes." Advances in Engineering Software 97 (2016): 72-84.

2014 Anthony Hafez, Ryan Squires, Amber Pedracini, **Alark Joshi**, Robert Seegmiller. "Collagen `<alpha>1(XI)` regulates bone microarchitecture, " Bone Journal, 2014.

2011 **Alark Joshi**, Dustin Scheinost, Hirohito Okuda, Dominique Belhachemi, Isabella Murphy, Lawrence H. Staib, Xenophon Papademetris, "Unified framework for development, deployment and robust testing of neuroimaging algorithms," Journal of Neuroinformatics, February 2011.

2009 **Alark Joshi**, Jesus Caban, Penny Rheingans, Lynn Sparling, "Case Study on Visualizing Hurricanes Using Illustration-Inspired Techniques," IEEE Transactions on Visualization and Computer Graphics, vol. 15, no. 5, pp. 709-718, Sep./Oct. 2009.

2008 **Alark Joshi**, Dustin Scheinost, Kenneth P. Vives, Dennis D. Spencer, Lawrence H. Staib and Xenophon Papademetris, "Novel interaction techniques for neurosurgical planning and stereotactic navigation," IEEE Transactions on Visualization and Computer Graphics, vol.14, no.6, pp.1587-1594, Nov.-Dec. 2008.

2008 **Alark Joshi**, Xiaoning Qian, Donald P. Dione, Ketan R. Bulsara, Christopher K. Breuer, Albert J. Sinusas and Xenophon Papademetris, "Effective visualization of complex vascular structures using a non-parametric vessel detection method," IEEE Transactions on Visualization and Computer Graphics, vol.14, no.6, pp.1603-1610, Nov.-Dec. 2008.

2008 **Alark Joshi** and Penny Rheingans, "Evaluation of illustration-inspired techniques for time-varying data visualization," In Proceedings of the Eurographics/IEEE TCVG Symposium on Visualization (Eindhoven, Netherlands, May 26-28, 2008), EuroVis 2008.

2007 Jesus Caban, **Alark Joshi** and Penny Rheingans, "Texture-Based feature tracking for effective time-varying data visualization," IEEE Transactions on Visualization and Computer Graphics, (Vol. 13, No. 6), pp. 1472-1479, 2007.

2007 Jesus Caban, **Alark Joshi** and Paul Nagy, "Rapid Development of Medical Imaging Tools with Open Source Libraries," Journal of Digital Imaging 20(1), pp. 83-93, 2007.

2005 **Alark Joshi** and Penny Rheingans, "Illustration-inspired techniques for visualizing time-varying data," Proceedings of the IEEE Visualization 2005, pp. 679-686.

2001 **Alark Joshi** and Douglas Dunham, "Interactive Visualization of Models of Hyperbolic Geometry," Masters Thesis, Computer Science Department, University of Minnesota Duluth, June 2001.

Conference Proceedings (Peer-Reviewed)

2023 Xornam Apedoe, Wen Li, Sami Rollins, Sophie Engle, **Alark Joshi**, Matthew Malensek and Chris Brooks, "Exploring Computer Science Identity Development Among Undergraduate Computer Science Majors," International Society of Learning Sciences (ISLS) conference, 2023.

2023 **Alark Joshi**, "Assessing the Impact of Specifications Grading on a Data Visualization course," In Proceedings of the Frontiers in Education (FIE) conference, 2023 (under review).

2022 **Alark Joshi**, Sophie Engle, Matthew Malensek, Chris Brooks, Xornam Apedoe, and Star Moore. "Acknowledging Inequities in Tech through a Community-Engaged Learning course." In Proceedings of the 54th ACM Technical Symposium on Computer Science Education (SIGCSE), 2022.

2022 Vedangi Bhavsar, Utkarsha Nehe, Aditya Mandke, Srushti Sardeshmukh, **Alark Joshi**. " Speech-based Data Exploration for Diabetes Management among Older Adults ," in the NLVIZ: Exploring Research Opportunities for Natural Language, Text, and Data Visualization workshop at IEEE Visualization, 2022.

2022 Allison Wong, **Alark Joshi**, and Sophie Engle, "Nirmaan: Dataset generation for multiclass scatterplot studies," SPIE Visualization and Data Analysis (VDA) Conference, 2022.

2021 **Alark Joshi**, "Learning Cues to Improve the Understanding of Explanatory Storytelling," In VisActivities: 2nd IEEE VIS Workshop on Data Vis Activities to Facilitate Learning, Reflecting, Discussing, and Designing, held in conjunction with IEEE VIS 2021, New Orleans, LA, USA. 2021.

2021 Sami N. Rollins, **Alark Joshi**, Xornam Apedoe, Sophie Engle, Matthew Malensek, and Gian Bruno. "Understanding Professional Identity Development Among Computer Science Students." In 2021 ASEE Virtual Annual Conference Content Access. 2021.

2021 Sami Rollins, **Alark Joshi**, Amruth N. Kumar, Stan Kurkovsky, and Tracy Camp. "Best Practices for Designing and Implementing NSF S-STEM Scholarship Projects." In Proceedings of the 52nd ACM Technical Symposium on Computer Science Education, pp. 1358-1358. 2021.

2021 Sami Rollins, **Alark Joshi**, Amruth N. Kumar, Stan Kurkovsky, Maureen Dowd, Victoria Hong, "Helping Academically Talented STEM Students with Financial Need Succeed," In Proceedings of the Frontiers in Education (FIE) conference, 2021.

2020 **Alark Joshi**, Marissa Schmidt, Shane Panter, Amit Jain, "Evaluating the benefits of Team-Based Learning in a Systems Programming Class," In Proceedings of the Frontiers in Education (FIE) conference, 2020.

2020 Sophie Engle, Sami Rollins, Gian Bruno, Xornam Apedoe, Matthew Malensek, Christina Tzagarakis-Foster, **Alark Joshi**, "Engendering Community to Computer Science Freshmen through an Early Arrival Program, " American Society for Engineering Education 2020.

2020 Darius Coelho, Rubin Trailor, Daniel Sill, Sophie Engle, **Alark Joshi**, Serge Mankovskii, Maria Velez-Rojas, Steven Greenspan, and Klaus Mueller, ""Blockchain for Collaborative Visual Analytics", 17th International Conference on Cooperative Design, Visualization, and Engineering, 2020.

2020 Jump Thanawut, Josh Anghel, Kristi Potter, **Alark Joshi**, "A Gaze-Contingent System for Foveated Multiresolution Visualization of Vector and Volumetric Data," SPIE Visualization and Data Analysis Conference, 2020.

2019 **Alark Joshi**, Amit Jain, Ernie Covelli, Jyh-haw Yeh, Tim Andersen, "A Sustainable Model for High-School Teacher Preparation in Computer Science", In Proceedings of the Frontiers in Education (FIE) conference, 2019.

2019 Stephen Hsu, David Kes, **Alark Joshi**, "Visualizing Tweets from Confirmed Fake Russian Accounts", SPIE Visualization and Data Analysis Conference 2019.

2018 **Alark Joshi** and Noopur Agarwal, "Gamifying Data Visualizations on Mobile Devices" In Proceeding of the CHI Workshop on Data Visualization on Mobile Devices, CHI 2018.

2018 **Alark Joshi** and Amit Jain, "Reflecting on the Impact of a Course on Inclusive Strategies for Teaching Computer Science," In Proceedings of the Frontiers in Education (FIE) conference, 2018.

2018 Law, Matthew, Mayank Thirani, Sami Rollins, **Alark Joshi**, and Nilanjan Banerjee. "Understanding Home Energy Saving Recommendations." In International Conference on Persuasive Technology, pp. 297-309. Springer, Cham, 2018.

2018 Reddy, Venkata, Brian Bushree, Marcus Chong, Matthew Law, Mayank Thirani, Mark Yan, Sami Rollins, Nilanjan Banerjee, and **Alark Joshi**. "Influencing Participant Behavior Through a Notification-Based Recommendation System." In International Conference on Persuasive Technology, pp. 113-119. Springer, Cham, 2018.

2016 Casey Haber, Lyndon Ong Yiu, **Alark Joshi**, and Sophie Engle, "Do Defaults Matter? Evaluating the Effect of Defaults on User Preference for Multi-Class Scatterplots, " Proceedings of the 9th International Symposium on Visual Information Communication and Interaction (VINCI), Short Paper, pp 91-95, September 2016.

2016 Seimei Matsusaki, Xi Han, **Alark Joshi**, and Sophie Engle, "Interactive Exploration of Multidimensional YouTube Data Using the GPLOM Technique" Proceedings of the 9th International Symposium on Visual Information Communication and Interaction (VINCI), Poster, **Best Poster Award**, pp 142-143, September 2016.

2015 Joshua Anghel, Kristin Potter, **Alark Joshi**, "Interactive Focus+Context Glyph and Streamline Vector Visualization", IEEE Visualization 2015 Poster.

2015 Matt Law, Sami Rollins, Nilanjan Banerjee, **Alark Joshi**, "Visualization-assisted Insights into Home Energy Usage, " Proceedings of the European Conference on Visualization (EuroVis). Eurographics, 2015.

2015 Peter Games, **Alark Joshi**. "Evaluation-guided metrics for visualization on mobile devices," **Best Paper Award**, SPIE Conference on Visualization and Data Analysis, 2015.

2014 Peter Games, **Alark Joshi**. "Visualization of off-screen data on tablets using context-providing bar graphs and scatter plots", **Best Paper Award**, SPIE Conference on Visualization and Data Analysis, 2014.

2014 Brady Cannon, Minoti Hiremath, Cheryl Jorcyk, **Alark Joshi**. "CoVE: A Colony Visualization System for Animal Pedigrees," Proceedings of the ACM 7th International Symposium on Visual Information Communication and Interaction, 2014.

2014 Susan Mason, Don Holley, Aaron Wells, **Alark Joshi**, Amit Jain, Thomas Wuerzer. "Social Network Analysis: A Means to Discovering the Tipping Point in Gaining Cooperation?". In Urban Affairs Association 44th Annual Meeting, March 19-22, 2014.

2013 Frederik Wiehr, Vidya Setlur, **Alark Joshi**. "DriveSense: Contextual Handling of Large-scale Route Map Data for the Automobile ", IEEE workshop on Big Data Visualization, 2013.

2012 Jared Shenson and **Alark Joshi**. "Visualizing Disease Incidence in the Context of Socioeconomic Factors", Proceedings of the 2012 International Symposium on Visual Information Communication and Interaction, 2012.

2012 Frederik Wiehr, Vidya Setlur, **Alark Joshi**. "Auto(mobile): Mobile Visual Interfaces for the Road". In ACM SIGGRAPH 2012 Mobile (SIGGRAPH '12). ACM, New York, NY, USA.

2012 Vanessa Gertman, Peter Olsoy, Nancy Glenn, **Alark Joshi**. "RSVP: Remote Sensing Visualization Platform for Data Fusion", IEEE Virtual Reality (VR) 2012 workshop on Immersive Visualization, March 2012.

2012 Peter Olsoy, Vanessa Gertman, Nancy Glenn, Jessica Mitchell, Eric Whiting, Rupesh Shrestha, Lucas Spaete and **Alark Joshi**, "Interactive Exploration and Data Fusion of Multimodal Remote Sensing Data," American Society for Photogrammetry and Remote Sensing, 2012.

2011 **Alark Joshi**, Dustin Scheinost, R. Globinsky, Kenneth P. Vives, Dennis D. Spencer, Lawrence H. Staib, Xenophon Papademetris. "Augmented inline-based navigation for stereotactic image guided neurosurgery". In Proceedings of the IEEE International Symposium on Biomedical Imaging (ISBI) pp.1869–1872, 2011.

2011 Carol A Moore, Vanessa Gertman, Peter Olsoy, Jessica Mitchell, Nancy F Glenn, **Alark Joshi**, Derek Norpchen, Rupesh Shrestha, Michael Pernice, Lucas Spaete, Shane Grover, Eric Whiting and Randy Lee, "Discovering new methods of data fusion, visualization and analysis in 3D immersive environments for hyperspectral and laser altimetry data," American Geophysical Union, December 2011.

2010 **Alark Joshi** and Xenophon Papademetris, "Visualization-based feedback for Image-Guided Neurosurgery, " 3rd Annual Image-Guided Therapy Workshop, National Center for Image-Guided Therapy (NCIGT), March 2010.

2010 **Alark Joshi**, Alexander Papanastassiou, Kenneth P. Vives, Dennis D. Spencer, Lawrence H. Staib, Xenophon Papademetris, "Light-Sensitive Visualization of Multimodal Data for Neurosurgical Applications," IEEE International Symposium on Biomedical Imaging (ISBI), 2010.

2010 Alexander Papanastassiou, Ronen Globinsky, **Alark Joshi**, Kenneth P. Vives, Xenophon Papademetris, Dennis D. Spencer, "Application of BioImage Suite for planning and neuronavigation in epilepsy surgery," American Society for Stereotactic and Functional Neurosurgery (ASSFN), 2010.

2010 Levent Alpoge, **Alark Joshi**, Dustin Scheinost, John Onofrey, Xiaoning Qian, Xenophon Papademetris, "A VTK-based CUDA-optimized Non-Parametric Vessel Detection Method," The VTK Journal, January 2010.

2009 **Alark Joshi**, Dustin Scheinost, Hirohito Okuda, Isabella Murphy, Lawrence H. Staib, Xenophon Papademetris, "Unified framework for development, deployment and testing of image analysis algorithms", 2009 MICCAI Workshop on Systems and Architectures for Computer Assisted Interventions, September 2009.

2009 **Alark Joshi**, Dustin Scheinost, Marisa Spann, Xenophon Papademetris, "Evaluation of Multi-viewport based visualization for Electrode Navigation during Stereotactic Image Guided Neurosurgery", (Oral presentation), International Brain Mapping and Interoperative Surgical Planning Society's 6th World Congress for Brain Mapping and Image Guided Therapy, August 2009.

INVITED TALKS

2023 **Visualization Literacy - Can we learn how to read unfamiliar charts?**, Department of Computer Science, Sonoma State University.

2023 **Applying for Academic Jobs**, Poorvu Center for Teaching and Learning, Yale University.

2022 **Visualization Literacy: Opportunities and Challenges**, NorCalViz Research Meetings.

2022 **Augmenting Cognition for Improved Decision-Making using Data Visualization**, Scientific Computing Institute, University of Utah.

2021 **Alark Joshi**, Katy Börner, Robert S Laramee, Lane Harrison, Elif E. Firat, Bum Chul Kwon, "Visualization Literacy for General Audiences - Can We Make A Difference?," Panel at IEEE Visualization '21.

2020 **Engaged Learning in the Classroom through Team-Based Learning**, Yale Poorvu Center for Teaching and Learning.

2020 **Augmented Cognition through Data Visualization**, U.S. Department of Homeland Security Center of Excellence (COE) Center for Accelerating Operational Efficiency (CAOE).

2019 **Effective Visual Representations using Python**, PyBay Silicon Valley.

2019 **Telling the Stories of Our Teaching**, Center for Teaching Excellence, University of San Francisco.

2018 **Augmenting Cognition through Data Visualization**, IEEE Silicon Valley Computational Intelligence Society.

2017 **Examining the effects of design of visualization techniques on user performance**, University of California San Diego.

2015 **Smart Interfaces for Mobile Devices**, Big Data Visualization meetup, CA Technologies Lab, San Jose.

2013 **Visualization Tools for Interactive Data Analysis**, GIS Applications and Visualization Techniques in Planning course (CRP 510), Department of Community and Regional Planning, Boise State University.

2012 **Help Students SEE it! Using Online Visualization Tools for Interactive Data Analysis** at the Center for Teaching & Learning at Boise State University.

2012 **Data Visualization for Nonprofits** at the Idaho Statewide NonProfit Conference.

2011 **Effective visualization of complex vascular structures using a non-parametric vessel detection method** at the Scientific Computing Institute at the University of Utah.

2011 **Biomedical Visualization: Neurosurgical Applications and Beyond** in the Department of Biology at Boise State University.

2011 **How Gamers Changed the World** at the IEEE Boise Computer Society.

2011 **Improved Multimodal Exploration through Scientific Visualization** at the Second Annual CAES Workshop on Modeling, Simulation and Visualization.

2011 **Immersive Scientific Visualization** (Keynote speaker) at the Center for Advanced Energy Studies at the Idaho National Labs as part of the Immersive Visualization Applications workshop.

2011 **Illustration-Inspired Visualization** in the Department of Computer Science at Old Dominion University.

2010 **Resources For Teaching In The Age Of The Internet** in the Department of Psychology at Yale University.

2010 **Resources For Teaching In The Age Of The Internet** in the *Preparing Future Science Faculty* seminar series organized by the Graduate Teaching Center at Yale University.

2010 **Enabling Insight and Exploration through Data Visualization** in the College of Engineering at Boise State University.

2009 **Introduction to GPU Computing** in the Department of Cell Biology at Yale University.

2009 **Enabling Insight and Exploration through Data Visualization** at the Young Investigators Meet organized by the Translational Health Science and Technology Institute at MIT.

2009 **Interdisciplinary Research through Visualization** at Tufts University.

2008 **Visualization Techniques for Neurosurgical Planning and ROI Connectivity** at the Yale University fMRI Seminar Series.

2007 **Illustration-inspired Visualization** at the Johns Hopkins University Whiting School of Engineering.

2006 **Illustration-inspired Techniques for Time-varying Data Visualization** at the IBM T. J. Watson Research Center.

2005 **Illustration-inspired techniques for time-varying data visualization** at the UMBC CSEE Department Student Speaker Colloquium.

KEYNOTE TALKS

2020 "The Future of Data Visualization is Mobile! ", SPIE Visualization and Data Analysis conference.

2011 "Immersive Scientific Visualization", Immersive Visualization Applications workshop at the Idaho National Labs (INL)..

AWARDS AND HONORS

2023 Full–Time Faculty Service Award in the College of Arts and Sciences at the University of San Francisco

2020 Sabbatical Research Award for the 2019-2020 Academic Year from the Provost's Office at the University of San Francisco

2015 Distinguished Teaching Award at the University of San Francisco.

2010 Best Panel Award at the IEEE Visualization 2010 conference for the panel "Perspectives on teaching data visualization". Co–Panelists were Tamara Munzner, Gordon Kindlmann, Daniel Keefe, Jason Dykes.

2009 Best Panel Award at the IEEE Visualization 2009 conference for the panel "New faculty and postdoctoral fellows spill the beans". Co–Panelists were Jeffrey Heer, Gordon Kindlmann, Miriah Meyer.

2006 Best Senator of the Year for the Graduate Student Association.

2001 Outstanding Graduate Teaching Assistant of the year, Department of Computer Science at the University of Minnesota.

COURSES TAUGHT

University of San Francisco

CS 480 - Community-Engaged Learning in Computer Science (Spring 2023)

CS 360 - Data Visualization, Department of Computer Science (Fall '14, '20, '21, Spring '18, '21, '22)

CS 686 - Reproducible Data Visualization, Department of Computer Science (Fall 2018)

MSDS 622 - Data Visualization for Data Scientists, Department of Data Science (Spring 2018)

CS 107 - Computing, Mobile Apps, and the Web, Department of Computer Science (Fall 2013, Spring 2015)

CS 110 - Introduction to Computer Science I using Python, Department of Computer Science (Fall '15, '16, '17, Spring '17, '19)

CS 112 - Introduction to Computer Science II, Department of Computer Science (Fall 2013 - Spring 2016)

CS 464 - Computer Graphics, Department of Computer Science (Spring 2014, Spring 2023)

CS 286 - Research Seminar in Computer Science, Department of Computer Science (Fall 2014, Spring 2016, Fall 2017)

Boise State University

CS 354 - Programming Languages, Department of Computer Science (Fall 2012)

CS 564 - Visualization Techniques, Department of Computer Science (Spring 2012)

CS 464 - Computer Graphics, Department of Computer Science (Fall 2011)

CS 253 - Software Development in C, Department of Computer Science (Spring 2011-2013)

Yale University

Understanding Effective Visual Representations (Spring 2010)

Programming for Image Analysis, Department of Biomedical Engineering (Spring 2009)

BioImage Suite Users Training, Department of Diagnostic Radiology, Magnetic Resonance Research Center (Spring 2008)

University of Maryland Baltimore County

CMSC 435 - Introduction to Computer Graphics, Department of Computer Science and Electrical Engineering (Spring 2005)

SERVICE

Service to the University

Chairperson of the Computer Science Department, 2020-2023

1. Collaborated with Sophie Engle and Chris Brooks to institute the *first* Computer Science "Department Bylaws."
2. Collaborated with Kristin Jones, Paul Haskell, and Tonya Miller to create the *first ever* "Computer Science Placement" test.
3. Coordinated the creation and piloting of the *new* "CS 111 - Introduction to Computer Science I using Java" course for Fall 2023, with the help of Kristin Jones and Paul Haskell, to help incoming freshmen and transfer students with their transition to USF.
4. Developed *three* certificates in coordination with Mikaela Mora.
   (a) Introduction to DevOps with Mario Lim and Arnold Salazar Jr.
   (b) Introduction to Computing using Python with Julia Nolfo (taught in Summer 2022 and 2023)
   (c) Introduction to Unity with Beste Yuksel
5. Hired *five* adjuncts and *three* term faculty members/lecturers through the 2020-23 duration.
6. Curriculum Changes through Curriculog: CS majors can take *any* two of the three systems courses: CS 315 (Computer Architecture), CS 236 (Introduction to Operating Systems), and CS 336 (Computer Networks) and CS 245 (Data Structures and Algorithms) as a prerequisite for CS 221 (C and Systems Programming)
7. Organized two internship panels for current students (Fall 2021)

Chair, Faculty Search Committee, Department of Computer Science, 2018-19

Computer Science Faculty Search committee member, 2014-2015, 2015-2016, 2016-2017, 2017-18

Community Engaged Learning and Teaching (CELT) Fellowship, The Leo T. McCarthy Center for Public Service and the Common Good, 2021-22

University Information Technology Committee (UITC) member, 2013-2017

Member of the **Ignatian Faculty Forum**, 2017-18

Steering Committee, Center for Teaching Excellence (CTE), University of San Francisco 2014-2016

Co-founder of the Data Visualization Speaker Series at USF (with Sophie Engle and Scott Murray)

Committee Member of the **Harney Renovation Committee**, 2018-2019

Organizer of the *free* **GirlTechPower** coding workshop for middle-school girls in the Bay Area (2015-current)

Co-organizer of the CS4SF 2014 workshop for women in computing

Computer Science **Graduate Admissions Committee**, 2013-2016, 2018-current

Computer Science Graduate Curriculum Revision Committee, 2013-2014, 2018-2019

Graduate Recruitment visit to India, 2013, 2014

Service to the Professional Community

NSF Reviewer in the Directorate for Computer & Information Science, 2015, 2016, 2018

Conference Co-Chair for SPIE Visualization and Data Analysis Conference, 2015

Lead Organizer for the Innovations in the Pedagogy of Data Visualization workshop, 2016, 2017

Program Committee for IEEE Visualization 2021, 2022, 2023

Program Committee for CHI 2018 Workshop on "Data Visualization for Mobile Devices"

Program Committee for EuroVis 2013-2020

Program Committee for SIGCSE 2017

Program Committee for SPIE Visualization and Data Analysis Conference 2012-2017

Program Committee for Eurographics Workshop on Visual Computing for Biology and Medicine 2012

Program Committee for IEEE Symposium on Biological Data Visualization 2011-2014

Program Committee for IEEE Workshop on Visual Analytics for Health Care 2011

NIH Reviewer for the Insight Toolkit - Algorithms, Adapters, and Data Distribution 2010

International Program Committee for the International Symposium on Visual Computing 2009-2012

Posters Chair for IEEE Visualization conference - 2009, 2010

Guest Editor for IEEE Computer Graphics and Applications - Special Issue on Smart City Visualization 2018

Book Reviewer for Morgan Kaufmann publishers

Book Reviewer for Elsevier publishing company

Book Reviewer for CRC Press - Taylor & Francis Group

Reviewer for the **DOE**'s Nuclear Energy University Programs (NEUP) - 2011, 2012

Reviewer for ACM SIGCHI Conference on Human Factors in Computing Systems (CHI) - 2011, 2012, 2017

Reviewer for the IEEE Transactions on Visualization and Computer Graphics (TVCG)

Reviewer for the IEEE Transactions on Applied Perception (TAP)

Reviewer for IEEE VisWeek conference 2004-13

Reviewer for the Computer Graphics Forum 2007-13

Reviewer for PacificVis 2009-2014

Reviewer for ACM SIGCHI Symposium on Engineering Interactive Computing Systems - 2012

Reviewer for IEEE Transactions on Information Technology in Biomedicine

Reviewer for the Symposium on Interactive 3D Graphics and Games conference - 2006

Reviewer for the Computer Supported Cooperative Work (CSCW) conference - 2008

Reviewer for the Eurographics workshop on Visual Computing for Biomedicine - 2008

Reviewer for BMC Journal on Bioinformatics

Service to the Community

Volunteer instructor for the **Girls Who Code** club in Burlingame, CA (2013-14) & Foster City, CA (2014-15, 2015-16, 2016-17)

Reviewer for the Girls Who Code summer immersion program - 2014

Scholarship Application Committee Member for the Grace Hopper Celebration - 2014

Co-Organizer for the National Center for Women & Information Technology (**NCWIT**) awards in Idaho - 2012

Steering Committee for NSF **Louis Stokes Alliances for Minority Participation (LSAMP)** Program at Boise State University - 2011-2012

Advisor to the **NASA Microgravity team** from Boise State University - 2012

Vice President for the Graduate Student Association - 2006-07

Funding Agency Peer Review

National Science Foundation (NSF)

National Institutes of Health (NIH)

Department of Energy (DOE)

Students Supervised at USF

Chandana Srinivas, Bachelor of Science in Computer Science (Research Assistant, FDF)

Colm Lang, Bachelor of Science in Computer Science (Research Assistant, FDF)

Bhumika Srinivas, Bachelor of Science in Data Science (Research Assistant, FDF)

Ariana Jorgensen, Master of Science in Computer Science (Research Assistant, FDF)

Rubin Johny, Master of Science in Computer Science (Research Assistant, FDF)

Tony Jimenez, Bachelor of Science in Computer Science (Research Assistant, FDF)

Alejandro Garcia, Bachelor of Science in Computer Science (Research Assistant, FDF)

Allison Wong, Master of Science in Computer Science (Research Assistant, FDF)

Pragya Garg, Master of Science in Computer Science (Research Assistant and Directed Study)

Lance Fernando, Bachelor of Science in Computer Science (Research Assistant)

Helen Chen, Bachelor of Science in Computer Science (Research Assistant, FDF)

Jia Hui Feng, Bachelor of Science in Computer Science (Research Assistant, FDF)

Gauri Joshi, Master of Science in Computer Science (Directed Study)

Thanawut Ananpiriyakul, Master of Science in Computer Science (Directed Study)

Shiyi Tan, Master of Science in Computer Science (Research Assistant, FDF)

Han Xi, Master of Science in Computer Science (Research Assistant, FDF)

Roderick Lisam, Master of Science in Computer Science (Masters Project and Directed Study)

Sindhuja Sridharan, Master of Science in Computer Science (Masters Project)

Fatima Zahra El Fallali, Master of Science in Computer Science (Directed Study)

Chao Lu, Master of Science in Computer Science (Directed Study)

Pirakorn Iamcharernying, Master of Science in Computer Science (Masters Project)

Colin Clayton, Bachelor of Science in Computer Science (Directed Study)

Gabrielle Corbett, Bachelor of Science in Mathematics (Research Assistant, FDF)

Diana Ly, Bachelor of Science in Computer Science (Directed Study)

William Chiang, Bachelor of Science in Computer Science (Directed Study)

Students Supervised at Boise State University

Brady Cannon, Master of Computer Science - November 2012

Peter Games, Master of Computer Science - May 2013

Joshua Anghel, Master of Computer Science - October 2013

Aaron Wells, Master of Computer Science (committee member)

Archana Nanjundarao, Master of Computer Science (committee member)

Sri Divya Deenadayalan, Master of Computer Science (committee member) - May 2012

Nazia Sarang, Master of Electrical and Computer Engineering (committee member) - Dec 2011

Steven Shofner, Bachelor of Computer Science - NSF LSAMP student 2012

Carla Barrero, Bachelor of Computer Science - NSF LSAMP student 2011

Jake Desarno, Bachelor of Computer Science - NSF STEP student 2012

Autumn Warren, Bachelor of Computer Science - NSF STEP student 2011

Grannsci Giraldo, Bachelor of Computer Science

Nilab Mohammad Mousa, Bachelor of Computer Science

Vanessa Gertman, Bachelor of Computer Science

MEMBERSHIPS

Association for Computing Machinery (ACM).

Institute of Electrical and Electronics Engineers (IEEE).

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