David S. Janzen

Computer Science and Software Engineering Department
California Polytechnic State University
San Luis Obispo, California
http://www.csc.calpoly.edu/~djanzen/

Education

Ph.D. in Computer Science **University of Kansas, 2006**
Defended in August 2006. Graduated with Honors in December 2006. GPA: 4.0
Dissertation Title: "An Empirical Evaluation of the Impact of Test-Driven Development on Software Quality"

Master of Science in Computer Science **University of Kansas, 1993**
Graduated with Honors. GPA: 4.0
Thesis Title: "On Using Classification and Regression Trees in Machine Learning"

Bachelor of Arts in Mathematics and Computer Science **Tabor College, 1990**
Graduated with Honors. GPA: 3.836 in all courses, 4.0 in Computer Science

Budapest Semesters in Mathematics **Eötvös University, 1989**

Academic Experience

California Polytechnic State University **August 2006 to present**
Professor of Computer Science and Software Engineering Coordinator. Full-time faculty member teaching undergraduate and graduate courses in software engineering. Promoted to Associate Professor June 2009. Granted tenure June 2010. Promoted to Professor June 2013. Center for Innovation and Entrepreneurship Faculty Fellow.

Westmont College, Montecito, CA **August to December 2020**
Adjunct Faculty. Part-time faculty member teaching undergraduate software engineering course.

Bethel College, North Newton, KS **August 1997 to 2006**
Associate Professor of Computer Science with tenure. Full-time faculty member teaching undergraduate courses including programming, software engineering, and networking. Created two new majors and a professional training institute. Supervised undergraduate research. Promoted to Associate Professor and granted tenure March 2003.

University of Kansas, Lawrence, KS **1991 to 1993 and 2004 to 2006**
Graduate Teaching Assistant for undergraduate computer programming and data structures courses.

Related Professional Experience

Steadfast Innovation, LLC **May 2012 to present**
Co-founder. Created award-winning "Squid" note-taking app for Android and ChromeOS pen-based tablets (squidnotes.com) with over 5M downloads. Recognized by Google as a top 25 app for ChromeOS and top 8 app for education (out of over 2M apps in Play Store). Featured in television and web ads, and in-store product demos by Google and other partners. Developed key business relationships with strategic partners including Google, Samsung, Acer, Dell, Lenovo, Nokia, Microsoft, and Qualcomm, among others.

SBDC **March 2017 to present**
Consultant. Provide technology consulting to San Luis Obispo Small Business Development Center clients. Primarily focus on helping local entrepreneurs imagine, plan, and develop software applications through requirements tools, software architecture, and technology evaluation. Clients vary from student teams in the HotHouse and Incubator, to established local companies.

CSUSM **May 2018 to January 2019**
Consultant to CSU San Marcos to create and launch new undergraduate software engineering major. Assisted in hiring two new SE faculty, reviewing and modifying SE curriculum, and recruiting first class of SE students to the program. Sponsored by $6 million Hispanic-Serving Institutions STEM grant from the U.S. Department of Education, a $1.5 million donation from ViaSat, and a $100,000 gift from Hunter Industries.

Simex **June 2001 to present**
Owner, Consultant, and Trainer. Created online "Java Essentials for Android" course with over 10,000 subscribers. Expert witness consultant for AT&T and Motorola on Android topics. Provided consulting to local companies on software engineering and Android mobile development and marketing topics. Developed and presented training courses to more than 400 professional software developers in Fortune 500 companies on topics including: object-oriented analysis, design, and programming with the UML, C++, and Java; design patterns, advanced Java topics, web application frameworks, agile methods, and test-driven development. Constructed custom web, mobile, and desktop software applications for automotive, retail, agricultural, and medical domains.

Sprint Corporation, Overland Park, KS **January 1993 through August 1997**
Held increasingly responsible positions from Artificial Intelligence Analyst to Manager, Applied Development. Directed and participated in all aspects including technical, managerial, and human resources concerning a state-of-the-art, near real-time expert system for detecting calling card fraud implemented in Lisp and C/C++. Managed $3M+ annual budget supporting risk containment of over $1M per day. Led major initiatives including international partnerships with domestic and international presentations at various levels including company executives. Co-inventor of patent and recipient of Outstanding Achievement Award.

Ruf Corporation, Olathe, KS **1991 to 1992**
Constructed intelligent address matching database application in Fortran.

Peer-Reviewed Journal Publications (* indicates student co-author)

- Chen, J., **Janzen, D.**, Chang, R., McGaughey, K., and Widmann, J., "Mobile Applications to Measure Students' Engagement in Learning," *Computers in Education Journal*, 2021 (to appear)
- **Janzen, D.** and Ryoo, J. "Engaging the Net Generation with Evidence-Based Software Engineering through a Community-Driven Web Database," *Journal of Systems and Software*, 82(4), 2009
- **Janzen, D.** and Saiedian, H. "Does Test-Driven Development Really Improve Software Design Quality?," *IEEE Software*, 25(2) 2008
- *Desai, C., **Janzen, D.** and Savage, K. "A Survey of Evidence for Test-Driven Development in Academia," *SIGCSE Bulletin inroads*, 40(2) 2008
- **Janzen, D.** and Saiedian, H. "Test-Driven Development: Concepts, Taxonomy, and Future Directions," *IEEE Computer*, 38(9) 2005 (cover feature)
- **Janzen, D.** "Building Web Applications with Servlets and JavaServer Pages," *The Journal of Computing Sciences in Colleges*, 17(4) 2002

Peer-Reviewed Conference Proceedings (* indicates student co-author)

- **Janzen, D.**, Chang, R., and Chen, J., "Development of Mobile Applications to Study Engineering Students' Patterns of Learning," *Frontiers in Education 2019*, Cincinnati, OH, October 2019.
- Chen, J., **Janzen, D.**, McGaughey, K., and Widmann, J., "Tracking Learning Engagement at the Student Level," *Frontiers in Education 2019*, Cincinnati, OH, October 2019.
- **Janzen, D.**, Bahrami, S., da Silva, B., and Falessi, D., "A Reflection on Diversity and Inclusivity Efforts in a Software Engineering Program," *Frontiers in Education 2018*, San Jose, CA, October 2018.
- Wood, Z., Clements, J., Peterson, Z., **Janzen, D.**, Smith, H., Haungs, M., Workman, J., Bellardo, J., and Debruhl, B., "Mixed Approaches to CS0: Exploring topic and pedagogy variance after six years of CS0," *Proceedings of the 49th SIGCSE Technical Symposium on Computer Science Education (SIGCSE'18)*, Baltimore, MD, February 2018.
- **Janzen, D.**, Hughes, A., Lenz, A., "Scaling Android User Interfaces: A Case Study of Squid," *Mobile! 2016 Workshop (co-located with Splash'16)*, Amsterdam, Netherlands, October 2016
- Chen, J. C., McGaughey, K, J., **Janzen, D. S.**, Teramoto Pedrotti, J., and Widmann, J. M., "Grit and its role in achievement among engineering students," *Sixth Research in Engineering Education Symposium*, Dublin, Ireland, July 2015
- **Janzen, D.**, Clements, J., *Hilton, M., "An Evaluation of Interactive Test-Driven Labs with WebIDE in CS0," *35th International Conference on Software Engineering (ICSE'13)*, pages 1090-1098, San Francisco, CA, IEEE Computer Society, May 2013
- *Hilton, M. and **Janzen, D.**, "On Teaching Arrays with Test-Driven Learning in WebIDE," *17th Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE'12)*, Haifa, Israel, July 2012.
- Haungs, M., Clark, C., Clements, J. and **Janzen, D.**, "Improving First-year Success and Retention through Interest-Based CS0 Courses," *Proceedings of the 43rd SIGCSE Technical Symposium on Computer Science Education (SIGCSE'12)*, Raleigh, NC, March 2012.
- *Dvornik, T. **Janzen, D.**, Clements, J., Dekhtyar, O. "Supporting Introductory Test-Driven Labs with WebIDE," *Conference on Software Engineering Education and Training (CSEE&T'11)*, Honolulu, Hawaii, May 2011
- *Reed, J. and **Janzen, D.**, "Contextual Android Education," *Conference on Software Engineering Education and Training (CSEE&T'11)*, Honolulu, Hawaii, May 2011
- Clements, J. and **Janzen, D.**, "Overcoming Obstacles to Test-Driven Learning on Day One," *Test-Driven Development Workshop, International Conference on Software Testing, Verification, and Validation*, Paris, France, March 2010
- Hayes, J., Dekhtyar, A., and **Janzen, D.** "Towards Traceable Test-Driven Development," *TEFSE, 2009 ICSE Workshop on Traceability in Emerging Forms of Software Engineering*, Vancouver, BC, May 2009
- *Desai, C., **Janzen, D.** and Clements, J. "Implications of Integrating Test-Driven Development into CS1/CS2 Curricula," *Technical Symposium on Computer Science Education (SIGCSE)*, Chattanooga, TN, March 2009
- *Vu, J., *Frojd, N., *Shenkel-Therolf, C., and **Janzen, D.** "Evaluating Test-Driven Development in an Industry-sponsored Capstone Project," *6th International Conference on Information Technology : New Generations*, Las Vegas, NV, April 2009

- *Dukovich, A. and **Janzen, D.** "Design Patterns Go To Hollywood: Teaching Patterns With Multimedia," *6th International Conference on Information Technology : New Generations*, Las Vegas, NV, April 2009

- Haungs, M., Clements, J., and **Janzen, D.** "Improving Engineering Education through Creativity, Collaboration, and Context In a First Year Course," American Society for Engineering Education (ASEE) Annual Conference, Pittsburgh, PA, June 2008

- **Janzen, D.** and Ryoo, J. "Seeds of Evidence: Integrating Evidence-Based Software Engineering," *Conference on Software Engineering Education and Training (CSEE&T)*, Charleston, SC, April 2008

- Ryoo, J., Fonseca, F., and **Janzen, D.** "Teaching Object-Oriented Software Engineering through Problem-Based Learning in the Context of Game Design," *Conference on Software Engineering Education and Training (CSEE&T)*, Charleston, SC, April 2008

- **Janzen, D.** and Saiedian, H. "Test-Driven Learning in Early Programming Courses," *Technical Symposium on Computer Science Education (SIGCSE)*, Portland, OR, March 2008

- *Razina, E. and **Janzen, D.** "Effects of Dependency Injection on Maintainability," *The 11th IASTED International Conference on Software Engineering and Applications (SEA)*, Boston, MA, November 2007

- **Janzen, D.**, Saiedian, H., and Turner, C. "Empirical Software Engineering in Industry Short Courses," *Conference on Software Engineering Education and Training (CSEE&T)*, Dublin, IR, July 2007

- **Janzen, D.** and Saiedian, H. "A Leveled Examination of Test-Driven Development Acceptance," *International Conference on Software Engineering (ICSE)*, Minneapolis, MN, May 2007

- **Janzen, D.** and Saiedian, H. "On the Influence of Test-Driven Development on Software Design," *Conference on Software Engineering Education and Training (CSEE&T)*, North Shore Oahu, HI, April 2006

- **Janzen, D.** and Saiedian, H. "Test-Driven Learning: Intrinsic Integration of Testing into the CS/SE Curriculum," *Technical Symposium on Computer Science Education (SIGCSE)*, Houston, TX, March 2006

- **Janzen, D.** "Software Architecture Improvement through Test-Driven Development," Doctoral Symposium, *Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA)*, San Diego, CA, October 2005

- **Janzen, D.** "Software Architecture Improvement through Test-Driven Development," ACM Student Research Competition, Poster and Extended Abstract, *Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA)*, San Diego, CA, October 2005

- *Kaufmann, R. and **Janzen, D.** "Implications of Test-Driven Development, A Pilot Study," Poster, *Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA)*, Anaheim, CA, October 2003

- **Janzen, D.** "Building Web Applications with Servlets and JavaServer Pages," Tutorial presented at *Eighth Annual Consortium for Computing in Small Colleges Central Plains Conference*, Kansas City, KS, April 2002

- **Janzen, D.** "From RS-232 to Object Request Brokers; Incremental Object Oriented Networking Projects," *32nd Technical Symposium on Computer Science Education (SIGCSE)*, Charlotte, NC, February 2001

- **Janzen, D.** "Teaching Object Technology in Industry Short Courses," Poster, *Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA)*, Denver, CO, November 1999
- **Janzen, D.** "Artificial Intelligence approaches to Fraud Detection and Risk Management," Panel Presentation, AI Approaches to Fraud Detection and Risk Management Workshop, *American Association of Artificial Intelligence (AAAI) National Convention*, Providence, RI, July 1997

Peer-Reviewed Electronic Publications

- **Janzen, D.** "Software Architecture Improvement through Test-Driven Development," ACM Student Research Competition Grand Finals, ACM Digital Library, May 2006

PhD Dissertation

- **Janzen, D.** "An Empirical Evaluation of the Impact of Test-Driven Development on Software Quality," University of Kansas, August 2006

Master's Thesis

- **Janzen, D.** "On Using Classification and Regression Trees in Machine Learning," University of Kansas, April 1993

Patents Awarded

- Co-inventor of "Method and Apparatus for Detection and Prevention of Calling Card Fraud" patent #6,188,753 filed June 30, 1997, awarded February 13, 2001

Certifications

Sun Certified Programmer for the Java 2 Platform, awarded May 29, 2001.

Sponsored Research - External Sources (PI or co-PI)

- "Does Active Learning Build Grit?," National Science Foundation, Division of Education and Human Resources Core Research, 2016, $499,275 over three years, plus extension to study effects of COVID-19, co-PI
- "Actively Building Grit," National Science Foundation, Division of Undergraduate Education, 2014, $199,991 over three years, co-PI
- "AWS in Education Research Grant," Amazon Web Services, March 2011, $7,500 in AWS service credits, PI
- "App Inventor to Android with WebIDE," Google Research Award, December 2010, $9,750 plus approximately $23,805 in mobile phones, PI
- "App Inventor Curriculum Grant," Google Award, November 2010, $10,000, PI
- "Test-Driven Learning with WebIDE," National Science Foundation, Division of Undergraduate Education, Course, Curriculum, and Laboratory Improvement Type I, September 2009, $153,344 over three years, PI
- "Android at Cal Poly," Google Research Award, July 2009, $20,000 plus approximately $9,600 in mobile phones, co-PI with Dr. Chris Lupo

- "WebIDE for CS1," Chevron, November 2008, $500, PI
- "Evaluation of Distributed Pair Programming Tools," Chevron, November 2008, $500, PI
- "Test-Driven Learning: Integrating Test-Driven Development in an Early Programming Course," Lockheed Martin, September 2007, $25,000, co-PI with Dr. John Clements
- "Software Architecture Improvement Through Test-Driven Development: An Empirical Study," Special Projects Award, ACM Special Interest Group on Computer Science Education (SIGCSE), July 2005, $5,000, PI

Sponsored Research - Internal Sources (PI or co-PI)

- "Planting Test-Driven Development SEEDS: An NSF CAREER Grant," Support for Faculty Efforts to Obtain Extramural Funding, Cal Poly, May 2007, $6,460, PI

Sponsored Projects

- "Software Engineering Capstone," Ropegun, September 2019, undisclosed
- "Software Engineering Capstone," Bridge, September 2019, undisclosed
- "Software Engineering Capstone," NeoCharge, September 2019, undisclosed
- "Software Engineering Capstone," Amazon Handmade, April 2019, undisclosed
- "Software Engineering Capstone," MarkLogic, April 2019, undisclosed
- "Software Engineering Capstone," Amazon Web Services, September 2017, undisclosed
- "Software Engineering Capstone," California Strawberry Commission, September 2017, undisclosed
- "Software Engineering Capstone," Microsoft, September 2016, undisclosed
- "Software Engineering Capstone," Snaption, September 2016, undisclosed
- "Software Engineering Capstone," General Atomics, September 2015, undisclosed
- "Software Engineering Capstone," Cru, September 2015, undisclosed
- "Software Engineering Capstone," Applied Technology Associates/Scientific Drilling International, September 2014, undisclosed
- "Software Engineering Capstone," Salesforce.com, September 2014, undisclosed
- "Software Engineering Capstone," Applied Technology Associates/Scientific Drilling International, September 2014, undisclosed
- "Software Engineering Capstone," Veeva, September 2013, undisclosed
- "Software Engineering Capstone," Salesforce.com, September 2012, undisclosed
- "Innovation Sandbox," National Collegiate Inventors and Innovators Alliance (NCIIA), August 2012, $8,000
- "Rimelands Testing," Crescent Moons Games, October 2010, $800
- "Software Engineering Capstone," Applied Technology Associates/Scientific Drilling International, September 2009, $10,000

- "Autonomous Military Robots," (with P. Lin, G. Bekey, and K. Abney), Office of Naval Research, August 2009
- "Software Engineering Capstone," Intuit Inc., September 2008, $5,000
- "Software Engineering Capstone," Intuit Inc., 2006-2007, technical books and prizes for software engineering capstone sequence, ~$2,500

Sponsored Outreach Activities

- "CS4HS," Google high school computer science outreach workshop, June 2016, $30,910, Director
- "Programming for STEAM," Google outreach workshop Los Osos Middle School, May 2013, $3,000, Director
- "CS4HS," Google high school computer science outreach workshop, July 2012, $15,000, Director
- "CS4HS," Google high school computer science outreach workshop, June 2011, $15,000, Director

Awards

- Outstanding Professor, Computer Science and Software Engineering Department, Cal Poly, May 2020
- Erik Nilsson Outstanding Christian Faculty Award, Cru, November 2019
- Center for Innovation and Entrepreneurship Faculty Fellow, Cal Poly, 2015 to present
- Volunteer of the Year Finalist, San Luis Coastal Unified School District, 2015
- Professor of the Year, Computer Science Department, Cal Poly, May 2007
- Innovation Quest Finalist, Cal Poly, April 2007
- Grand Finals Third Place Winner in ACM Student Research Competition, Graduate Division, awarded at ACM Awards Banquet, San Francisco, CA, May 21, 2006
- Paul F. Huebner Memorial Award, Electrical Engineering and Computer Science Department, University of Kansas, 2006
- Third Place Winner in ACM Student Research Competition, *Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA)*, San Diego, CA, 2005
- Doctoral Symposium, *Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA)*, San Diego, CA, 2005
- Strobel Scholarship, University of Kansas, 2004
- Educator's Scholarship to *Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA)*, Vancouver, BC, 2004, Anaheim, CA, 2003, Seattle, WA, 2002, Tampa, FL, 2001, Minneapolis, MN, 2000 and Denver, CO, 1999
- Faculty Development Award, Bethel College, 2000, 2003
- Julius and Agatha Dyck Franz Teaching Development Award, Bethel College, 1998, 2003
- Outstanding Achievement Award, Sprint Corporation, 1996

Invited Presentations

- "Teamwork in Technology," Global English School, Bangkok, Thailand, March 2019
- "Working Effectively with Legacy Code," four universities in China, March 2019
- "Teamwork in Technology," twelve universities in China and Vietnam, October 2018
- "Strawberry Center Projects Panel," Strawberry Automation Summit, January 11, 2018
- "Squid + Chromebooks in EDU," Google National EDU Sales Training, December 13, 2017
- "Embracing the Pen in the Classroom with Papyrus on Android Tablets," Google Teaching Theater, International Society for Technology in Education (ISTE), June 29, 2015
- "Mobile Application Development," Cal Poly High-Tech Industry Breakfast Forum, May 2011
- Commencement Speaker, Cal Poly, December 2010
- "Test-Driven Development," Adobe Systems Inc., San Jose, CA, October 2008
- "Test-Driven Development," Central Coast Code Camp, San Luis Obispo, CA, September 2008
- "Pair Programming and Test-Driven Development in CS1/CS2," Computer Science Department Fall Retreat, September 2008
- "Real Estate Tools for a Buyers Market," Innovation Quest Finalist, Cal Poly, April 2007
- "Software Engineering Stories: From Fraud Detection to eXtreme Programming," Invited Talk, IEEE Student Chapter, Cal Poly, November 2006
- "Test-Driven Development Research" to Java Developers' Lunch and Learn, Cessna Aircraft Company, December 2005
- "Agile Processes" to BUS 735 Systems Analysis and Design, Univ. of Kansas, November 2005
- "Test-Driven Development and JUnit" to EECS 810 Principles of Software Engineering, Univ. of Kansas, October 2005
- "Computing in the World, at Bethel, and in the Summers" to Newton Kiwanis, Sept. 2003.
- "Y2K, Disaster or Disruption" to Bethel College Life Enrichment, October 1999
- "Teaching Object Technology in Industry Short Courses," to Bethel College Faculty, Fall Retreat, August 1999
- "Y2K Implications" to Bethel College Mennonite Men's group, June 1999
- "Distributed Objects with Multithreaded Object Request Brokers," as part of Mathematical Sciences Seminar, Bethel College, April 1999
- "Technology as Tool" to Bethel College Faculty, Fall Retreat, August 1998

Conferences Attended

- British Educational Training and Technology Show (BETT), London, UK, 2020
- Automated Software Engineering, San Diego, CA, 2019
- Frontiers in Education, Cincinnati, OH, 2019

- Google I/O Developer Conference, Mountain View, CA, 2019
- British Educational Training and Technology Show (BETT), London, UK, 2019
- Frontiers in Education, San Jose, CA, 2018
- Conference on Software Engineering Education and Training, Savannah, GA, 2017
- MyScript future.write() Digital Writing Conference, Santa Clara, CA, 2017
- Google I/O Developer Conference, Mountain View, CA, 2017
- Foundations of Software Engineering, Seattle, WA, 2016
- Splash, Amsterdam, 2016
- Automated Software Engineering, Singapore, 2016
- TiECON, San Jose, CA 2016
- MyScript Future Write Digital Writing Conference, San Jose, CA, 2015
- Google I/O Developer Conference, San Francisco, CA, 2015
- Yahoo Developer Conference, San Francisco, CA, 2015
- SIGCSE Technical Symposium on Computer Science Education, Kansas City, MO, 2015
- International Society for Technology in Education, Philadelphia, PA, 2015
- Samsung Developer Conference, San Francisco, CA, 2014
- Uplinq Qualcomm Developer Conference, San Francisco, CA, 2014
- Google I/O Developer Conference, San Francisco, CA, 2014
- International Society for Technology in Education, Atlanta, GA, 2014
- Samsung Developer Conference, San Francisco, CA, 2013
- Google I/O Developer Conference, San Francisco, CA, 2013
- ICSE International Conference on Software Engineering, San Francisco, 2013
- Google Faculty Summit (invitation only), Mountain View, CA, 2012
- ITiCSE Annual Conference on Innovation and Technology in Computer Science Education, Haifa, Israel, 2012
- CCSC:SW Consortium for Computing Sciences in Colleges, Southwest Regional Conference, Stockton, CA, 2012
- CCSC:CP Consortium for Computing Sciences in Colleges, Central Plains Regional Conference, Springfield, MO, 2012
- SIGCSE Technical Symposium on Computer Science Education, Raleigh, NC, 2012
- Conference on Software Engineering Education and Training, Honolulu, HI, 2011
- SIGCSE Technical Symposium on Computer Science Education, Dallas, TX, 2011
- Google I/O Developer Conference, San Francisco, CA, 2010
- International Conference on Software Testing, Paris, France, 2010

- Google I/O Developer Conference, San Francisco, CA, 2009
- ITNG International Conference on Information Technology : New Generations, Las Vegas, NV, 2009
- SIGCSE Technical Symposium on Computer Science Education, Chattanooga, TN, 2009
- Central Coast Code Camp, San Luis Obispo, CA, 2008
- Conference on Software Engineering Education and Training, Charleston, SC, 2008
- SIGCSE Technical Symposium on Computer Science Education, Portland, OR, 2008
- Central Coast Code Camp, San Luis Obispo, CA, 2007
- Conference on Software Engineering Education and Training, Dublin, Ireland, 2007
- International Conference on Software Engineering (ICSE), Minneapolis, MN, 2007
- Conference on Software Engineering Education and Training, North Shore Oahu, HI, 2006
- SIGCSE Technical Symposium on Computer Science Education, Houston, TX, 2006
- Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA), San Diego, CA, 2005
- Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA), Vancouver, BC, 2004
- Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA), Anaheim, CA, 2003
- Consortium for Computing Sciences in Colleges Central Plains Conference, Emporia, KS, 2003
- SIGCSE Technical Symposium on Computer Science Education, Reno, NV, 2003
- Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA), Seattle, WA, 2002
- Consortium for Computing Sciences in Colleges Central Plains Conference, Kansas City, KS, 2002
- Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA), Tampa, FL, 2001
- SIGCSE Technical Symposium on Computer Science Education, Charlotte, NC, 2001
- Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA), Minneapolis, MN, 2000
- Consortium for Computing Sciences in Colleges Central Plains Conference, Lee's Summit, MO, 2000
- Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA), Denver, CO, 1999
- SIGCSE Technical Symposium on Computer Science Education, Atlanta, GA, 1998
- Twelfth National Conference on Artificial Intelligence (AAAI), Seattle, WA, 1994
- ACM 20th Annual Conference on Computer Science, Kansas City, MO, 1992

Courses Taught (Cal Poly courses highlighted)

- "Java Essentials for Android," Udemy.com, online video course, 2012-2020
- **CSC123 "Introduction to Computing - Mobile," Cal Poly, 2010-2011**
- **CSC101 "Fundamentals of Computer Science I," Cal Poly, 2011**
- CS130 "Creative Software Architectures for Collaborative Projects," Westmont College, 2020
- **CSC409 "Current Topics in Software Engineering - Android Application Development," Cal Poly, 2010-2013**
- **CSC436 "Mobile Application Development - Android," Cal Poly, 2013-2014**
- **CSC307 "Introduction to Software Engineering," Cal Poly, 2007-2008, 2011**
- **CSC406 "Software Deployment," Cal Poly, 2007-2020**
- **CSC405 "Software Construction," Cal Poly, 2007-2020**
- **CSC402 "Software Requirements Engineering," Cal Poly, 2006-2020**
- **CSC509 "Software Engineering II (Graduate course)," Cal Poly, 2008-2009**
- **CSC508 "Software Engineering I (Graduate course)," Cal Poly, 2007-2009**
- **CSC570 "Special Topics in Computer Science - Software Law (Graduate course)," Substitute Instructor, Cal Poly, Oct−Dec 2013**
- **SIE512 "Systems Synthesis (Graduate course)," Cal Poly, 2015-2016**
- "Test-Driven Development with JUnit and Ant," Simex 2004-2006
- "Object-Oriented Design Patterns in Java and C++," Simex 2002-2006
- "Developing Web Applications with Spring and Hibernate," Simex, 2005
- "Computer Programming - C++," University of Kansas, 2005
- "Object-Oriented Programming in C++," Bethel College 2000-2001, Simex 2001-2005
- "Advanced Java Topics," Simex, 2004
- "Object-Oriented Programming in Java," Simex 2001-2004
- "Computer Programming 1," Bethel College, 1998-2004; Hesston College 1999-2000
- "Data Communications and Computer Networks," Bethel College, 1998, 2000, 2002, and 2004
- "Software Studio," Bethel College, 2000, 2001, 2003, and 2004
- "Senior Seminar," Bethel College, 1997-2004
- "Software Design and Development," Bethel College, 1999, 2001 and 2003
- "Computer Systems," Bethel College, 2002-2003
- "Computer Programming 2," Bethel College, 1997-2003
- "Introduction to Information Systems," Bethel College, 2003
- "Object-Oriented Analysis and Design," Bethel College, 2000-2001, Simex 2003

- "Data Structures," Bethel College, 2001
- "Computers in Organizations," Bethel College, 1998-1999
- "Computer Literacy," Bethel College, 1997-1998
- "Database Systems/Other Topics," Independent study, Bethel College, 1998
- "Introduction to Computer Science," University of Kansas; 1991-1992. Coordinator, 1992

Selected Graduate Research Supervised

- "On the Impact of Android API Evolution on Education Materials," Kennedy Owen, MS Thesis, defended June 12, 2017
- "Revalume: Configurable Employee Evaluations in the Cloud," Terrence Li, MS Thesis, defended March 20, 2017
- "Automating Self Evaluations for Software Engineers," Jonathan Miranda, MS Thesis, defended June 8, 2016
- "A Multi-carrier Collaborative Solution to Minimize Connectivity-loss," Michael Wong, MS Thesis, defended May 27, 2016
- "HCI and Gamification in WebIDE," Michael Hilton, MS Thesis, defended March 8, 2013
- "Supporting Introductory Test-Driven Labs with WebIDE," Thomas Dvornik, MS Thesis, defended January 6, 2011
- "Contextual Android Education," James Reed, MS Thesis, defended November 5, 2010
- "Software Metric Tool for Adobe Flex," Daniel Jackson, MS Thesis, incomplete
- "Automated Tools for Test-Driven Learning in CS1," Jimmy Hua, MS Thesis, incomplete
- "A Coupling-Complexity Metric Suite for Predicting Class Quality," Chris Gray, MS Thesis, defended June 3, 2008
- "Design Patterns go to Hollywood: Teaching Design Patterns with Multimedia," Adam Dukovich, MS Thesis, defended June 3, 2008
- "A Pedagogical Approach to Introducing Test-Driven Development," Chetan Desai, MS Thesis, defended May 20, 2008
- "A Quantitative Analysis of the Effects of Access Methods on Cohesion," Brian Abreu, MS Thesis, defended June 15, 2007
- "Effects of Dependency Injection on Maintainability," Ekaterina Razina, MS Thesis, defended June 7, 2007

Graduate Committee Membership

- "Software Requirements Classification using Word Embeddings and Convolution Neural Networks," Vivian Fong, defended June 2018
- "Encouraging Development of Mobile Applications as a Service to the Community," Vanessa Forney, defended June 2016
- "Fog Protocol and FogKit: A JSON-Based Protocol and Framework for Communication Between Bluetooth-Enabled Wearable Internet of Things Devices," Spencer Lewson, defended June 2015

- "Creating a Testing Framework and Workflow for Developers New to Web Application Engineering," Tag Ashby, defended June 2014
- "Walking Assistant - A Mobile Aid for the Visually-Impaired," Adin Miller, defended June 2014
- "Future of Payment Platforms," Salim Youssefzadeh, defended June 2014
- "Can Clustering Improve Requirements Traceability? A TraceLab-enabled Study," Brett Armstrong, defended December 2013
- "Automated Student Code Assessment with Symbolic Execution and Java PathFinder," Karl Bell, defended December 2012
- "Developing Digital Field Guides for Plants: A Study from the Perspective of Users," Emily Schwarz, defended June 1, 2011
- "The State of Software Engineering Maturity and Licensure," Travis Dean, defended December 7, 2010
- "The use of Contextual Clues in reducing False Positives in an Efficient Vision-Based Head-Gesture Recognition System Implemented with Finite State Machines," Brian Blonski, defended May 17, 2010
- "A Strategy Oriented, Machine Learning Approach to Automatic Quality Assessment of Wikipedia Articles," Gabriel de la Calzada, defended April 19, 2010
- "JDiet: Footprint Reduction for Memory-constrained Systems," Michael Huffman, defended June 5, 2009
- "Incremental Validation of Formal Specifications," Paul Corwin, defended May 8, 2009
- "Improving Adoptability in Reverse Engineering Tools," Erik Kitson, defended October 3, 2008
- "A Comparison of Object-Relational and Relational Databases," Lara Nichols, defended December 10, 2007
- "Tablet-Based Presentation Systems & Learning Styles," Ngan Phan, defended April 18, 2008

Selected Undergraduate Research Supervised

- "Cru Android App," Dylan Sun, 2020
- "Adventure Rentals," Zach Westfall, 2019
- "Stock Dog," Nishanth Dara, Ashley Newman, Sigal Shaul, Salonee Thanawala, 2018
- "Poly Rides V2," Joel Braun, Wenmin He, Charnpreet Singh, Austin Weir, 2018
- "Double Agent," Jacob Francis, 2017
- "Appointment Helper," Quang Ngo, 2017
- "Weflow," Max Hudson, 2017
- "PolyRides," Myra Lukens, 2017
- "PDFtk Java UI," Eric Dybsetter, 2017
- "Gatherologie," Brandon Vo, 2017

- “HikeIt,” Matthew Davis, Jon Brausch, 2017
- “Poseidon,” Andrew Peterson, 2017
- “Revalume,” Bill Mak, 2016
- “Repay,” Esha Joshi, Vivian Fong, 2016
- “Fulfilling a RESTful Commitment,” Noah Dietz, 2016
- “Actively Learning: iOS Data Collection Application,” Bhaumik Kotecha, 2016
- “Pronto,” Brandon Clark, Chase Dreszer, Matt Versaggi, Ryan Zink, 2016
- “iBeacon Building Navigation Mobile Android Application,” Sterling Tarng, Calvin Wong, 2015
- “Ticket Scanning Application for ETicket Express,” Ian Washburne, 2015
- “QuickBooks Self-Employed iOS Application,” Braden Young, 2014
- “Engineers Without Borders IMPACT Mobile App,” Megan Arnez, David O’Connor, Ebele Okonkwo, 2014
- “Awana Management System,” Haydn Gilbert, 2014
- “TripLog,” Jessica Burroughs, 2014
- “AACF Basketball Tourney Android app,” Adriel Fuad, 2013
- “WebIDE Lab Authoring Tool,” Sean Ghiocel, 2011
- “Wingman,” Issa Araj, 2011
- “Blotify,” Wilson Lau, Nahan Mock, 2011
- “Roommate Expenses,” Kellen Rogers, Nick Pafundi, 2011
- “Punchd,” Kareem Nassar, 2011
- “Android MatchMe,” Sasiluk Ruangrongsoraki, Aaron Rivera, 2011
- “Poly Room Finder,” Vincent Sordo, 2011
- “WebIDE Labs,” Natalia Tupy, 2011
- “Skeletonizer,” Matthew Hui, 2011
- “Punchd,” Reed Morse, Grantland Chew, 2010
- “iFixit on iPhone,” Jay Schultz, 2009
- “Social Web Browser,” Alex Andresen, Adam Deets, David Giamanco, Nathan Tsoi, 2009
- “ePortfolio,” Tyler Charlesworth, 2009
- “Conveyance Builder,” Brad Barbee, 2009
- “Paint-based Automated Music Composition,” Kevin Carr, 2009
- “A Web-based Survey Application for Test-Driven Development,” Yeongshnn Ong, 2009
- “Spherical Image Recognition and Tracking,” Keian Christopher, 2009

- "Project Tsukahara: Web 2.0 Meet Planning Application," Jason Desrosiers and Jonathan Thomassian, 2009
- "Web 2.0 Civil Engineering Virtual Laboratory Environment," Ming Liu, 2009
- "Web Integrated Development Environment for CS1 with Flex and Web-CAT," Manuel Garcia, 2009
- "Automated Music Composition with Genetic Algorithms," Lee Ching, 2008
- "HomeBuyerDB.com: The Home Buyer Data Base," Ben Koonce, 2008
- "Automating Rape Suspect Examinations with Programmatic PDF Annotations," Broc Miramontes, 2007
- "Machine Learning Approaches to Named Entity Recognition," Allison Penner, 2004
- "Lossy Digital Audio Compression with an emphasis on Ogg Vorbis I," Benjamin Voth, 2004
- "JPEG Image Compression," James Powers, 2004
- "Mersenne Primes," Ian Schmidt, 2004
- "Open Source Software for The Industry - Reality or Utopian Idea? Case Study: Open Source GIS Application," Denis Antipov, 2003
- "Enterprise Application Design Patterns in a Web Application," Kenneth Riungu, 2003
- "The Implications of Test-Driven Development on Software Quality," Reid Kaufmann, 2003
- "Design Patterns in Object-Oriented Software," Shelly Weibert, 2003
- "Evolution and Computing," Brian Stucky, 2002
- "The Use of Elliptic Curves in Modern Cryptography," Lisa Thimm, 2001
- "Research, Design, and Implementation of a Modern Web Application," Paul Ortman, 2001
- "Multithreaded Programming in Java: Scheduling in the Virtual Machine," Ryan Koehn, 1998

Entrepreneurial Student Projects Supervised (partial list)

- "Repay," Cal Poly CIE Design and Development Hackathon Winners, 2016
- "Resound.fm," HotHouse Accelerator Company, 2014
- "Upward Automation," HotHouse Accelerator Company, 2014
- "Make it Rain 3D," Innovation Quest Finalist, HotHouse Participant, 2012
- "SLO Bus Tracker," formed LLC, awarded contract from Apple, 2012
- "Punchd," acquired by Google, 2011
- "Papyrus," formed LLC, awarded contract from Samsung, HotHouse Participant, 2011
- "Lookup Link (now tersetag)," formed corporation, Innovation Quest Finalist, Innovation Quest Incubator, 2011
- "Reception Mapper," Innovation Quest Finalist, 2010
- "Friend Riot," Innovation Quest Finalist, 2010

Teaching Development

- "Assessment and Rubrics," Center for Teaching and Learning, Cal Poly, 2008
- "Professional Development," Newer Faculty Learning Community, Cal Poly, 2007
- "Using a WIKI to Improve Learning," Teaching Well Workshops, Cal Poly, 2006
- "Excellence in Teaching and Learning," Newer Faculty Learning Community, Cal Poly, 2006
- "Making Handouts and Homework Meaningful and Exciting," Teaching Well Workshops, Cal Poly, 2006
- "Professional Development," Newer Faculty Learning Community, Cal Poly, 2006
- "Improving Learning using a Hybrid (Blended) Course," Teaching Well Workshops, Cal Poly, 2006
- "Newly tenured faculty RPT panel," Newer Faculty Learning Community, Cal Poly, 2006
- "How to Have a Rewarding First Quarter at Cal Poly," Cal Poly, 2006
- Academy for Software Engineering Educators and Trainers, North Shore Oahu, HI, 2006

Professional Affiliations

- IEEE Computer Society (IEEE-CS) (expired)
- Association of Computing Machinery (ACM) (expired)
- Special Interest Group on Computer Science Education (SIGCSE) (expired)
- American Society for Engineering Education (ASEE) (expired)

Conference Program Committees

- Short papers chair, Conference on Software Engineering Education and Training, CSEE&T, 2008

Review Service

- Frontiers in Education, 2019
- Information and Software Technology (Elsevier), 2016
- Transactions on Computing Education, 2015
- Transactions on Software Engineering, 2013
- Transactions on Computing Education, 2012
- ACM Inroads, 2012
- Technical Symposium on Computer Science Education, SIGCSE Papers, 2012
- Transactions on Software Engineering, 2011
- Transactions on Computing Education, 2011

- Technical Symposium on Computer Science Education, SIGCSE Papers, 2011
- Conference on Software Engineering Education and Training, CSEE&T Papers, 2011
- Technical Symposium on Computer Science Education, SIGCSE Papers, 2010
- Journal of Systems and Software, 2009
- Technical Symposium on Computer Science Education, SIGCSE Papers, 2009
- IEEE Software, 2008
- Technical Symposium on Computer Science Education, SIGCSE Papers, 2008
- Conference on Software Engineering Education and Training, CSEE&T Papers, 2008
- Empirical Software Engineering, An International Journal, 2007
- International Journal of Engineering Education, Special issue on Trends in Software Engineering Education papers, 2007
- Conference on Innovation and Technology in Computer Science Education, ITiCSE Papers, 2007
- Technical Symposium on Computer Science Education, SIGCSE Papers, 2007
- Technical Symposium on Computer Science Education, SIGCSE Tutorials, 2007
- Technical Symposium on Computer Science Education, SIGCSE Papers, 2006
- Technical Symposium on Computer Science Education, SIGCSE Tutorials, 2005
- Conference on Software Engineering Education and Training, CSEE&T Papers, 2005
- Perspectives on Science & Christian Faith, American Scientific Affiliation, 2000

College/Department Service

- Software Engineering Faculty Search Committee Chair, 2019-2020
- Software Engineering Faculty Search Committee Chair, 2016-2017
- Software Engineering Faculty Search Committee Chair, 2015-2016
- Academic Senate, 2012-2014
- CENG Retention, Promotion, Tenure Committee, 2013-2014
- CENG Project-Based Learning Task Force, 2010-2011
- Open House Committee, Computer Science Department, 2007-2015
- Week of Welcome Committee, Computer Science Department, 2011-2012
- Curriculum Committee, Computer Science Department, 2014-2016
- Software Engineering Curriculum Committee, 2006-2016
- Curriculum Committee, Computer Science Department, 2008-2009, 2010-2011
- Software Engineering Lab Remodel, Lead Faculty, 2009
- College of Engineering Strategic Challenges Task Group, 2008

- PBLI Academic Steering Committee, 2007-2008
- SOAR New Student Orientation Presentation, July 2008
- Undergraduate Curriculum Committee, University of Kansas, 2004-2005
- Admissions, Scholarship, and Financial Aid Committee, Bethel College, 2003-2004
- Computer Science Curriculum Committee, Associated Colleges of Central Kansas, 1997-2004, Chair 2001-2003
- Faculty Welfare Committee, Faculty Development Chair, Bethel College, 2001-2003
- Technology Committee, Bethel College, 1998-2000
- Social Activities Committee, Bethel College, 1998-2000, 2001-2003
- Advisory Committee to the Associate Dean of Student Development, Bethel College, 1998-99
- Science Hall Task Force, Bethel College, 1997-98
- Computer Literacy Task Force, Bethel College, 1997-98

Contests

- Google Developer Challenge 2, "Campus Maps," Android application, August 2009
- Coach for ACM Intercollegiate Programming Contest teams, 1998, 2001-2003, Highest team ranking: 22 out of 113 in North Central Region, 2001. State rankings: 1st and 3rd in Kansas, 2003, 2nd and 4th in Kansas, 2002

Outreach Activities

- Engineering Possibilities in College (EPIC), College of Engineering, Cal Poly, taught software engineering labs for high school students, 2009-2019
- "Programming for STEAM," Google outreach workshop, Los Osos Middle School, May 2013
- CS4HS Workshop for high school computer science teachers, wrote proposal and organized two-day workshop for twenty-five teachers with four Cal Poly faculty, Cal Poly, June 2012
- Community Programming Class, Shoreline Calvary Chapel, July 2012
- CS4HS Workshop for high school computer science teachers, wrote proposal and organized two-day workshop for forty teachers with six Cal Poly faculty, Cal Poly, June 2011
- Software Engineering Lab Tours, Cal Poly Open House, 2010
- C3 Media class, Los Osos Middle School, developed and taught four-week instructional unit on computer programming with Scratch, 2009
- Software Engineering Lab Tours, Cal Poly Open House, 2009
- Society of Women Engineers Build an Engineer Day, co-led computer science labs for middle school students, 2008
- Computer Club, Del Mar Elementary, developed and taught six week after school course on computer programming with Alice, 2008
- Software Engineering Lab Tours, Cal Poly Open House, 2008

- Society of Women Engineer's Build an Engineer Day, co-led computer science labs for 45 middle school students, October, 2007
- Society of Women Engineer's High School Shadow Day, presented guest lecture on the differences between computer science and software engineering to about 45 high school students, November, 2007

Club Activities

- Club Advisor, Asian American Christian Fellowship, 2009 to present
- Club Advisor, Chinese Christian Fellowship, 2016 to 2019
- Club Advisor, Mobile App Development, 2010-2011, 2015 to 2019

Professional and Community Service

- San Luis Coastal Unified School District Career Technical Education Advisory Board Chair, 2019-2020
- Elder, Shoreline Calvary Chapel, 2012-2015, 2017-2020
- San Luis Coastal Unified School District Education Technology Committee, 2011-2012
- Morro Bay High School Site Council, 2011-2012
- Family Connections Christian Adoptions guest speaker, 2011-2017
- SLO County Food Bank Volunteer, 2011, 2012
- Chaperone for sixth-grade Science Camp Week at Rancho El Chorro, Del Mar Elementary, Morro Bay, CA, February 2008
- Organized and led bi-weekly study on dating and marriage, Navigators, California Polytechnic State University, 2006-2007
- Chair of Northridge Elementary School Site Council, 2002-2003
- Employee Satisfaction Survey lead, Bethel College, 2001-2002
- USD373 Technology Task Force, November 1999
- Web site redesign lead, Bethel College, 1998-99
- United Way Volunteer, Sprint, Overland Park, KS