Curriculum Vitae
Stefan Brandle

Professor of Computer Science
Department of Computer Science and Engineering
Taylor University
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Education

Ph.D. Computer Science, Illinois Institute of Technology (IIT), 5/98
> Thesis Title: *Using Joint Actions to Explain Acknowledgments in Tutorial Discourse: Application to Intelligent Tutoring Systems*
> Thesis Advisor: Martha W. Evens

M.S. Computer Science, Illinois Institute of Technology (IIT), Chicago, IL 5/92
B.A. cum laude, Philosophy, Wheaton College, IL, 5/86

Professional Academic Experience

Professor, Taylor University, IN, 08/11 – present
Adjunct Professor, Handong Global University, South Korea, 12/19-present
Visiting Professor, Handong Global University, South Korea, 08/19-12/19
Associate Professor, Taylor University, IN, 8/02 – 5/03, 08/04 – 05/08, 08/09 – 05/10
Visiting Fulbright Scholar, University of Mauritius, 8/08 – 7/09
Visiting Associate Professor, Valparaiso University, IN, 8/03 – 5/04
Assistant Professor, Taylor University, 9/99 – 5/02
Lecturer, Illinois Institute of Technology (IIT), IL, 8/98 – 5/99
Adjunct Instructor, Wheaton College, IL, 8/97 – 5/98
Research Assistant, Illinois Institute of Technology, 5/96 – 8/97
Instructor, Illinois Institute of Technology, 1/94 – 5/96
Adjunct Instructor, Wheaton College, 8/92 – 5/93

Grant/Research Activity

STTR PHASE I, SPACEWERX, "Zero Waste 24/7 Autonomous Black Box Tracked Satellite: The Recycled Constellation (Black Box – ZW)," H. Voss (PI), J. Dailey, M. Orvis, M. Voss, M. Schuckel (NearSpace Launch); K. Kiers (Co-PI), S. Brandle (Co-I), M. Bates (Co-I) (Taylor University). Total grant is for $250k; Taylor portion is for $76k: 2022-2023.

Taylor University Department of Computer Science & Engineering ($9K). Verbatim text memorization (Scriptures, poetry, etc.) learning and learning research system: summer 2021.

Lockheed-Martin Advanced Technology Laboratories (>$600,000). Various cybersecurity research efforts. Co-PI and/or Point of Contact: 2017-2022.

Indiana Space Grant Consortium ($1,610) 2017-2018 academic year. TWEET K-12 Robotics Outreach. PIs: Stefan Brandle, Eliza You.

Women's Giving Circle ($2,500) 2016-2017 academic year, Support for Women in Science, Engineering, and Technology. PIs: Stefan Brandle, Eliza You.

Faculty Mentored Undergraduate Summer Scholarship ($7,200) summer 2016, for text memorization technology. PIs: Stefan Brandle, Jonathan Geisler.

Science Research Training Project ($3,345) summer 2013, Exploring Intelligent Multi-Agent Cooperation by Building Agents for the RoboCup Virtual Soccer League. PIs: Stefan Brandle, Art White.

"Preparing and Delivering Community Presentations on Online Safety for Adults and Children" ($750), February-May 2010, service learning project, Taylor University. PI: Stefan Brandle.

Fulbright Scholar Fellowship to the University of Mauritius ($75,000), 12 months, August 2008-July 2009.

Science Research Training Project ($3,000) summer 2007, "An Investigation of Techniques for Building Automated Testing Programs". PI: Stefan Brandle; student: Thomas Nicol.

Traveled to visit Bingham University in Nigeria to deliver lectures, consult on curriculum, and investigate future cooperation possibilities ($2,300). Submitted 11/2006. Funded 12/2006. Funded jointly by the Taylor

University Centre for Global Engagement, Center for Teaching and Learning Excellence, CSS Department, and Upland Community Church. PI: Stefan Brandle

Taylor University Educational Technology Center Mini-grant ($500). "Prototyping an Entirely Online Data Structures Lab Book." (May, 2006). PI: Stefan Brandle

National Collegiate Inventors and Innovators Alliance (NCIIA)/Kern Family Foundation (KFF) grant #2962–05 $5,000 KEEN Planning Grant. Submitted 11/14/2005; awarded 12/5/2005. PI: Mick Bates; Co-PIs: Stefan Brandle, Bob Davis, Bill Toll

National Science Foundation (NSF) 3-year $240,432 Information and Intelligent Systems (IIS) proposal 0552628. "Site REU in Computer Science and Computer Engineering with Emphasis on Autonomous and Intelligent Systems – RUI." Submitted 09/07/2005; judged competitive, but declined 12/20/2005. PI: Stefan Brandle; co-PI: Will Holmes.

Taylor University Step Grant 2-year $17,000. "Automating Data Structures Lab Assessment." Submitted 02/07/2005; awarded 04/04/2005. PI: Stefan Brandle

Science Research Training Project ($2,000) summer 2002, TU SAT-1 and automated grading, feedback and visualization system. PI: Stefan Brandle

Commercial Research

Proprietary research on designing, implementing, testing, and documenting algorithms for combining post-demodulation RF downlinks for inclusion in a next generation satellite ground infrastructure architecture for RT Logic. (Spring 2018) Four students and one professor worked on the project during January of 2018. Five students (four of them new to the project) and two professors continued work on the project during the spring of 2018. The team did a final presentation of their research at Kratos RT Logic in Colorado Springs at the end of April, 2018.

Client-approved brief news release: "Taylor University Computer Science and Engineering students and professors are contracted to develop innovative algorithms for Kratos RT Logic, a leading satellite communications provider. These algorithms increase the resilience of satellite ground architectures by combining the output of geographically diverse receivers. This allows lossless communication for critical assets in the face of both RF and network impairments."

Consultant for NearSpace Launch. Developed software technology for satellite communications through the Globalstar network, telemetry processing, ground station, front end processors, Space Data Dashboard for Virgina Space ThinSat STEM program. 2013-present.

Project point-of-contact for Taylor University/Lockheed-Martin Advanced Technology Laboratories in various cybersecurity projects. 2016-present.

Software architect, developer analyst for Near Space Launch/Taylor University ground station and satellite data communications. Part of team that built three successful cube satellites which were funded and launched by the United States Air Force Research Laboratory: TSAT (2014), GEARRS-1 (2015), GEARRS-2 (2015), SHARC (2017). Significant and novel aspects of the projects include satellite simplex and duplex data communications via an existing satellite communications network (Globalstar). Participated 06/2013-present. (5 Computer Science & Engineering faculty/staff, 8 student developers).

Proprietary research for Lockheed-Martin Advanced Technology Laboratories in the area of high-granularity network artifacts for cyber testing. Spring 2010 (2 faculty, 2 student researchers); summer 2010 (1 faculty, 1 student researcher); fall 2010 (3 faculty, 5 student researchers); spring 2011 (3 faculty, 5 student researchers); summer 2011 (4 faculty, 3 student researchers); fall 2011 (3 faculty, 6 student researchers); spring 2012 (2 faculty, 3 student researchers).

"After-the-fact hyperlink construal and insertion into legal documents in PDF format" and related projects related to indexing, storing, and retrieving relevant legal documents. Kallina & Associates CharitablePlanning.com project. Fall 2005-Summer 2008. Bulk of work was summer 2006 (4 faculty, 1 student); summer 2007 (4 faculty, 3 students); summer 2008 (1 student).

Awards and Honors

Taylor University sabbatical at Handong Global University, Pohang, South Korea (Fall 2019). Project: teaching principles of human-computer interaction, relationship-building.

Taylor University sabbatical in Cuenca, Ecuador (Fall 2012). Project: Learning Android device programming.

Fulbright Scholar Fellowship to the University of Mauritius, 12 months, August 2008-July 2009.

Offered Fulbright award to Rwanda for 2004-2005 school year. Had to decline for family reasons.

Undergraduate College Fellowship and Academic Unit Fellowship ($4,000) 1998-1999 academic year, Illinois Institute of Technology

Office of Naval Research AASERT fellowship, full graduate tuition for 1996-1997

Best Student Paper, Eighth Midwest AI and Cognitive Science Conference, 1997

Illinois Institute of Technology Rice Campus Honoree, 1995

Books
Brandle, Denning, Geisler, et al. <u>Web Programming</u>. Zyante.com online interactive book. 2016. https://www.zybooks.com/catalog/web-programming/

Brandle, Geisler, Robergé, and Whittington. <u>C++ Data Structures: A Laboratory Course</u>, 3rd Edition. Jones & Bartlett, 2008, ISBN 978-0763755645.

Robergé, Brandle, and Whittington. <u>A Laboratory Course in C++ Data Structures</u>, 2nd Edition. Jones & Bartlett, 2003, ISBN 0-7637-1976-5.

Refereed Publications
M Mays, N Drabinsky, S Brandle. Feature Selection for Malware Classification. 28th Modern Artificial Intelligence and Cognitive Science Conference, MAICS 2017, Fort Wayne, Indiana: pp. 165-170. http://ceur-ws.org/Vol-1964/ (accessed 2019-11-05).

Nurkkala, Thomas, and Brandle, Stefan. Software Studio: Teaching Professional Software Engineering. Proceedings of the 42nd ACM technical symposium on Computer science education SIGCSE, Dallas, Texas, 2011, pp. 153-158.

Evens, Martha W., Brandle, Stefan, Chang, Ru-Charn, et al. CIRCSIM-Tutor: An Intelligent Tutoring System Using Natural Language Dialogue. <u>Twelfth Midwest AI and Cognitive Science Conference</u>, MAICS 2001, Oxford, OH, pp. 16-23.

Freedman, Reva, Brandle, Stefan, Glass, Michael, et al. Content Planning as the Basis for an Intelligent Tutoring System (System Demonstration). In <u>Proceedings of the Ninth International Workshop on Natural Language Generation (INLG-9)</u>, Niagara-on-the-Lake, Ontario, 1998, pp. 280-283.

Brandle, Stefan, and Evens, Martha. 1997. Acknowledgments in Tutorial Dialogue. In Eugene Santos, Ed., <u>Eighth Midwest AI and Cognitive Science Conference</u>, Dayton, OH, AAAI Press, AAAI Technical Report CF-97-01, Menlo Park, CA: 13-17.

Brandle, Stefan. 1996. Understanding Human Communication Acknowledgment Protocols by Studying Artificial Communication Protocols. <u>Proceedings of Annual MAICS Conference</u>. http://www.cs.indiana.edu/event/maics96/Proceedings/brandle.html.

Non-Refereed Publications and Posters
Matthew C. Voss, Jeff F. Dailey, Matthew B. Orvis, et al. 2021. "ID, GPS Tracking, 24/7 Tag Link for CubeSats and Constellations: Flight Results". Proceedings of the AIAA/USU Conference on Small Satellites. https://digitalcommons.usu.edu/smallsat/2021/all2021/112/

Hank Voss, Jeff Dailey, Matthew Orvis, et al. 2019. "Architecture & Manufacture for 1/7U to 27U 60 ThinSat Constellations: Flight Results". Proceedings of the AIAA/USU Conference on Small Satellites. https://digitalcommons.usu.edu/smallsat/2019/all2019/298/

Hank Voss, Jeff Dailey, Matthew Orvis, Art White, and Stefan Brandle. 2018. "'Black Box' Beacon for Mission Success, Insurance, and Debris Mitigation". Proceedings of the AIAA/USU Conference on Small Satellites. https://digitalcommons.usu.edu/smallsat/2018/all2018/378/

Hank Voss, Jeff Dailey, Matthew Orvis, Arthur White, and Stefan Brandle. 2016. "Globalstar Link: From Reentry Altitude and Beyond," Proceedings of the AIAA/USU Conference on Small Satellites, Session VII: Communications, 1. http://digitalcommons.usu.edu/smallsat/2016/S7Comm/1/.

Jeff Dailey, Hank Voss, Art White, Stefan Brandle. 2015. "Globalstar Communication Link for CubeSats: TSAT, GEARRS1, and GEARRS2," Proceedings of the AIAA/USU Conference on Small Satellites, Pre-Conference Workshop. http://digitalcommons.usu.edu/smallsat/2015/all2015/134/.

Brandle, Stefan, and Whittington, David. "Automated Grader & Feedback System, or 'How we're trying to use technology to speed up grading and improve the quality of feedback'", ACM SIGCSE-2003 poster session, Reno, NV; referenced in the Proceedings of the Thirty-Fourth SIGCSE Technical Symposium on Computer Science Education: p. 414.

Holmes, W.C., Bryson, Josh, Gerig, Brent, et al. "TU Sat 1: A Novel Communications and Scientific Satellite," Proceedings of the AIAA/USU Conference on Small Satellites, SSC02-I-1. http://digitalcommons.usu.edu/smallsat/2002/all2002/1/.

Brandle, Stefan, and Evens, Martha. 1997. Acknowledgments in Tutorial Dialogue. Poster session at Cognitive Science Society conference. Proceedings of the Nineteenth Annual Conference of the Cognitive Science Society, Stanford University, Stanford, CA, Lawrence Erlbaum Associates, Mahwa, NJ: 872.

Brandle, Stefan, Robergé, James, and Smith, George. 1996. The Realities of Teaching the Distance Learner. Proceedings of the 13th International Conference on Technology and Education: New Orleans, LA: 416-418.

Presentations, Workshops, and Educational Outreach

Brandle, Stefan. "Walk into My Future." Outreach event for Jay County 7th grade students, satellite research talk, April 4, 2023.

Brandle, Stefan. "Web Design." Workshop for Korea Wales International Christian School, Taylor University, January 3-10, 2022.

Brandle, Stefan. "Interactive Gaming." Handong Global University, South Korea, December 5, 2019.

Brandle, Stefan. "What is programming?" Korea Wales International Christian School, South Korea, November 12, 2019.

Brandle, Stefan. "Would Jesus use an iPhone?" Korea Wales International Christian School, South Korea, November 12, 2019.

Brandle, Stefan. "Introduction to Satellites and Satellite Communication." Department of Computer Science and Engineering, Handong Global University, South Korea, November 8, 2019.

Brandle, Stefan. "Faith, Learning, and the Peace Child." Teaching from the Christian Perspective lecture series, Handong Global University, South Korea, November 5, 2019.

Brandle, Stefan. "Would Jesus use an iPhone?" The Empower Institute, Taylor University, July 10, 2019.

Brandle, Stefan. "What's Up? Satellites, of Course!" Blackford County Amateur Radio Club, Taylor University, Indiana, April 18, 2019.

Brandle, Stefan. "Update on Satellite Communications and Ground Station Software." Blackford County Amateur Radio Club, Hartford City, Indiana, April 19, 2018.

Brandle, Stefan. Weekly robotics program for middle school girls as part of a STEM outreach program partially funded by the Indiana Space Grant Consortium. Taylor University, Indiana: February-April, 2018.

Brandle, Stefan. Project launch meetings for participation in the Virginia Space ThinSat STEM outreach program. The King's Academy, Jonesboro, Indiana: October 18, 2017; November 8, 2017.

Brandle, Stefan. Four presentations on the Virginia Space ThinSat STEM outreach program. The Indiana Academy for Science, Mathematics, and Humanities, Muncie, Indiana, October 17, 2017.

Brandle, Stefan. "Satellite Communications and Ground Station Software, and the First Robotics League." Blackford County Amateur Radio Club, Hartford City, Indiana, April 20, 2017.

Brandle, Stefan, Lynn, Emily, and Bell, Alison. Introduction to Programming, PEEPs 4-H SPARK club. Hartford City, Indiana, four sessions in November, 2016.

Brandle, Stefan. Programming mentor, Muncie & Delaware First Robotics club, team 1720 (http://phyxtgears.org/). Muncie, Indiana, September 2016 through May 2017.

Brandle, Stefan. "Fulbright Opportunities for Taylor University." Taylor University, Upland, Indiana, October 26, 2016.

Brandle, Stefan. "Computer Science Department Research Projects: Satellites, Autonomous Drones, Laser Tag, and RoboCup Soccer." Blackford County Amateur Radio Club, Hartford City, Indiana, August 18, 2016.

Brandle, Stefan. "Fulbright Opportunities for Students and Professors". Summer undergraduate research talks. Taylor University, July 13, 2016.

Jeff Daily, Hank D. Voss, Art White, Stefan Brandle. 2015. "Globalstar Communication Link for CubeSats". Proceedings of the AIAA/USU Conference on Small Satellites, Pre-conference workshop. http://digitalcommons.usu.edu/smallsat/2015/all2015/134/.

Brandle, Stefan. "Creating Computer Animations". Taught one-week classes on programming with Scratch to 3rd-8th graders. Taylor University Summer Academy, Upland, Indiana, June, 2013.

Brandle, Stefan. "Spectacular Software Errors and How to Avoid Them". Universidad del Azuay, Cuenca, Ecuador, January 9 (Systems Dept.), 2012.

Brandle, Stefan. "Automated Software Testing". Universidad del Azuay, Cuenca, Ecuador, January 9 (Systems Dept.), 2012.

Brandle, Stefan. "Introduction to Artificial Intelligence". Colegio Tecnico Sudamericano, Cuenca, Ecuador, January 8, 2012.

Brandle, Stefan. "Network Security and New Network Technologies". Universidad del Azuay, Cuenca, Ecuador, December 18 (Engineering Dept.), 2012.

Brandle, Stefan. "La Sanación Que Viene De Dios". Iglesia Verbo, Cuenca, Ecuador, December 3, 2012.

Brandle, Stefan. "Crecer Como Hijo De Misioneros". Iglesia Verbo, Cuenca, Ecuador, December 3, 2012.

Brandle, Stefan. "Introduction to Artificial Intelligence". Universidad del Azuay, Cuenca, Ecuador, November 29 (Engineering Dept.) and December 13 (Systems Dept.), 2012.

Brandle, Stefan. "Serie de entrenamiento sobre cómo enseñar con Scratch". 10 two-hour sessions at Colegio Bilingüe Interamericano, Cuenca, Ecuador, November-December, 2012.

Brandle, Stefan. "Introducción al programma Scratch". Colegio Tecnico Salesiano, Cuenca, Ecuador, October 29, 2012.

Brandle, Stefan, Geisler, Kasper, Daniel, Shaffer, Chadd. Proprietary presentations on results of research for Lockheed-Martin Advanced Technology Laboratories in the area of high-granularity network artifacts for cyber testing. May 8, 2012.

Brandle, Stefan, Deal, Garret, Hahn, Micah, Kasper, Daniel, Shaffer, Chadd, Schrock, Jonathan, Sjoberg, Alex, Wilson, Steven. Proprietary presentations on results of research for Lockheed-Martin Advanced Technology Laboratories in the area of high-granularity network artifacts for cyber testing. January 24, 2012.

Brandle, Stefan, Wilson, Steven. Proprietary presentations on results of research for Lockheed-Martin Advanced Technology Laboratories in the area of high-granularity network artifacts for cyber testing. June 24, 2011.

Brandle, Christina, and Brandle, Stefan. Sub-Saharan Fulbright Scholar/Student pre-departure orientation for Mauritius. June 19-21, 2011, Washington, D.C.

Brandle, Stefan. "Scratch Club". Monthly meeting with 3rd–8th graders to demonstrate their new scratch projects, discuss programming issues, and introduce computer science topics. February, 2011 through May, 2012.

Biere, Jon, Brandle, Stefan, Deal, Garret, Schrock, Jonathan. Proprietary presentations on results of research for Lockheed-Martin Advanced Technology Laboratories in the area of high-granularity network artifacts for cyber testing. December 21, 2010.

Brandle, Stefan, and Whipple, Andrew. "Be Fruitful: Planting and Care of Fruit Trees". Upland Community Church, Upland, Indiana, October 2, 2010.

Brandle, Stefan. "Creating Computer Animation Stories". Taught two one-week classes on programming with Scratch to 3rd-5th and 6th -8th graders. Taylor University Summer Academy, Upland, Indiana, June, 2010.

Brandle, Stefan. "Safety for Children on the Internet". Upland Community Church, Upland, Indiana, September 18, 2010.

Brandle, Stefan, and Blair, Ian. "Education in the Year 2020". Teaching for Technology Conference, Taylor University, Upland, Indiana, August 20, 2010.

Bier, Austin, Brandle, Stefan, Denardo, Jesse, Geisler, Jonathan, and Schrock, Jonathan. Proprietary presentations on results of research for Lockheed-Martin Advanced Technology Laboratories in the area of high-granularity network artifacts for cyber testing. July 26, 2010.

Brandle, Stefan. "Safety for Children on the Internet". VIA Credit Union, July 10, 2010, Marion, Indiana.

Brandle, Stefan. "Tutorial: Automated Grading of Student Programming Assignments". CCSC:CP, April 9-10, 2010, Park University, Parkville, Missouri.

Brandle, Stefan. "The Family Computer". Upland Community Church, February 13, 2010, Upland, Indiana.

Brandle, Stefan. "The Fulbright Experience". Two presentations for Ivy-Tech faculty and students, November 9, 2009, South Bend, Indiana.

Brandle, Stefan. "Automated Grading of Student Programming Assignments". CCSC:MW, October 10, 2009, St. Xavier University, Chicago, Illinois.

Brandle, Stefan. "Challenges in Providing Education for the Least of These". Fall science seminar lecture series, School of Natural and Applied Sciences, September 14, 2009, Taylor University, Upland, Indiana.

Brandle, Stefan. "Workshop on Automated Grading of Student Programming Assignments". June 30-July 3, 2009. Department of Computer Science and Engineering, University of Mauritius.

Brandle, Stefan. "Live from Mauritius" Internet presentation for Taylor University students in Summer Research Training Program, July 15, 2009.

Brandle, Stefan. "Using Technology to Engage First-Year Computer Science Students in Mastery Learning." 2006 Fort Wayne Teaching Conference, February 17, 2006, IUPFW, Fort Wayne, Indiana.

Brinks, Daniel J., and Brandle, Stefan. "Touché: A Computer Science Laboratory Autograder." Indiana Academy of Science, 121st Annual Meeting, October 6-7, 2005, Saint Mary-of-the-Woods College, Saint Mary-of-the-Woods, Indiana.

Brandle, Stefan, and Geisler, Jonathan. "BattleShips Project Set", Nifty Assignments Special Panel, ACM SIGCSE-2005 annual conference, St. Louis, MO; referenced in the Proceedings of the Thirty-Sixth SIGCSE Technical Symposium on Computer Science Education: p. 372.

Brandle, Stefan. 2002. "Automated Grader and Feedback System." Teaching with Technology Show 'n Tell, faculty workshop, Taylor University, October 9, 2002.

Brandle, Stefan, Digh, Andy, and McCormick, Martha, "Selecting and Preparing Student Programming Teams", Panel Session, Bob Riser moderator, 15th Annual Southeastern Conference of the Consortium for Computing in Small College (CCSC:SE), Lipscomb University, Nashville, TN, November 2-3, 2001.

Brandle, Stefan. 1996. "Computer Science Labs: Using Closed Labs." 1996 Midwest Computer Conference, Loyola University.

Brandle, Stefan. 1995. "Computer Science Labs: A Newcomer's Observations." 1995 Midwest Computer Conference, Northern Illinois University.

Student Presentations/Publications

Hruska, Thomas. "Vexed Puzzle Solver: Developing a Program Incrementally." Proceedings of the Ninth Annual CCSC Central Plains Conference (CCSC:CP 2003), Emporia State University, Emporia, Kansas. In The Journal of Computing Sciences in College, Volume 18, Number 4, April 2003, pp. 183-188.
Thomas submitted this paper as a professional paper (got published in the proceedings), not as a student paper (don't get published in the proceedings), and sparked a debate within the conference committee when it was discovered that he was a student, not a professor. The committee decided that his paper had been accepted as a good professional paper before it was known that he was a student, and that he had thus earned the right to having the paper published in the proceedings.

Robergé, Brandle, and *Whittington*. A Laboratory Course in C++ Data Structures, 2nd Edition. Jones & Bartlett, 2003, ISBN 0-7637-1976-5.
David Whittington and I co-wrote the entire second edition of the book during the summer preceeding

David's senior year and much of the fall of that year. David was able to attend the SIGCSE 2003 conference, receive a "Jones and Bartlett author badge", and meet with prospective book adopters at the publisher's booth.

Brandle, Stefan, and ***Whittington, David***. "Automated Grader & Feedback System, or 'How we're trying to use technology to speed up grading and improve the quality of feedback'", ACM SIGCSE-2003 poster session, Reno, NV; referenced in the Proceedings of the Thirty-Fourth SIGCSE Technical Symposium on Computer Science Education: p. 414.

Indiana Student Software Awards Competition (ISSAC, http://www.butler.edu/cs/ISSAC/). 2002 was the last time the competition took place.

- 2002, Joshua Chapman, "Solar 3D" (and Solar Sphere), 2nd place undergraduate individual.

- 2001, Luke Ehresman and Nathan Ehresman, "Squirrel Mail", 1st place undergraduate team, see http://www.squirrelmail.org/.

Classes Taught

Handong University
 Human-Computer Interaction, ECE40097 (F19)

University of Mauritius
 Multimedia Communication, CSE 6043 (F08)
 Computer System Organization, CSE 1007Y (S09) – co-taught
 Web Technology, CSE 2003Y (S09) – co-taught
 Computer Networks, CSE 3002Y (S09) – co-taught

Taylor University
 Computer Science & Engineering: New Majors Orientation (F22, F23)
 Computing and Culture – Applications and Context (F21, S22)
 Introduction to Programming with Pascal, COS 112 (F99)
 Introduction to Computer Science, COS 120 (F04)
 Foundations of Computer Science, COS 121 (F05, S06, F06, S07, F09, S10, F10, S11, F11, S12, S13, F13, S14, F14, S15, F15, S16, F16, S17, F17, S18, F18, S19, S20, F20, S21, F21, S22, F22, S23, F23)
 Interactive Webpage Programming, COS 143 (F13, J14, F14, J15, F15, J16, F16, J17, F17, J18, F18, J19, J20, J21, J22, J23)
 Missions Technology, COS 230 (F06, F09, F10)
 Business Applications Programming, COS 240 (S00)
 Data Structures, COS 250 (F99, S00, F00, S01, F01, S02, F02, S03)
 Data Structures and Algorithms, COS 265 (F21)
 Introduction to Artificial Intelligence, COS 280 (S06, S07, S08, S10, S11, S12, S13, S14, S15, S16, S17, S18, S19, S20)
 Human Computer Interaction, COS 314 (S10, S12, Summer 20)
 Current Literature Survey, COS 310 (F01, F02, F06, F13, F14, F15)
 Data Communications, COS 331 (S06, S07, S10, S13, S15, S17)
 Software Engineering, COS 340 (F04, F07, F10, F11)
 Competitive Programming, COS 370 (F02)
 Software Engineering Project I, COS 370 (F05)
 Software Engineering Project II, COS 370 (S06)
 Android Programming, COS 370 (S13, S14)
 Natural Language Processing, COS 380 (S07)
 Computer Organization and Architecture, COS 381 (F99, F00, F01, F02)
 Computer Architecture, COS 382 (F23)
 Advanced Project: Text Memorization Software, COS 394 (F17)
 Operating Systems, COS 421 (S00, S01, S02, S03, S23)
 Directed Research, COS 450 (F01, S02), COS 450-RoboCup Soccer (F13, J14), COS 450-Autonomous Drone (F14-S15, F15-S16), Malware classification using image classification techniques (S16-F16), Robotics for Space (S17).
 Senior Thesis II, COS 453-Computer Virus Activity Identification (S13).
 Introduction to Systems, SYS 101 (F18)

E-Commerce, SYS 210/310 (F00, S01, F01, S02, F02, S03, S10, S12)
Modeling and Simulation, SYS 402 (F09)
Natural Science Seminar, NAS 480 (F13, F14, F20, F21, F22)
Foundations of Christian Thought – Discussion Group Leader, IAS 110 (F00)

Illinois Institute of Technology
Introduction to the Professions II, CS101 (S99)
Introduction to Programming II with C++, CS200 (S95)**
Data Structures and Algorithms, CS331 (F98, S99)**
Systems Programming, CS351 (F94, S95, F95, S96)**
Introduction to Advanced Studies I, CS401 (F98, S99)**
Undergraduate Research, CS 491 (S99)
Introduction to Programming with C++, CS495 (S97)
Operating System Design and Implementation, CS551 (S94, F94, S95, F95, S96, F98, S99)**
* Classes marked by an asterisk were taught in a traditional classroom and simultaneously to remote students via the university's distance learning system, IITV.

Valparaiso University
Algorithms and Programming, CS157 (F03)
Algorithms and Abstract Data Types, CS158 (S04)
Data Structures and Programming Languages, CS257 (F03)
Software Design and Development, CS358 (S04)
UNIX-Based Web Application Programming, CS 290 (S04)

Wheaton College
Introduction to Programming Using Java (S98)
Computer Literacy (F97, S98)
Operating Systems, CSCI 455 (S93)
Seminar Series on Scientific Visualization (F92)

Conferences Attended

ACM Special Interest Group for Computer Science Education (ACM SIG-CSE) annual meeting: 1999, New Orleans, LA; 2000, Austin, TX; 2001, Charlotte, NC; 2002, Covington, KY; 2003, Reno, NV; 2004, Norfolk, VA; 2005, St. Louis, MO; 2006, Houston, TX; 2007, Covington, KY; 2008, Portland, OR; 2010, Milwaukee, Wisconsin; 2011, Dallas, Texas; 2012, Raleigh, North Carolina; 2013, Denver, Colorado; 2014, Atlanta, Georgia; 2015, Kansas City, MO; 2016, Memphis, TN; 2017, Seattle, WA; 2018, Baltimore, MD; 2019, Minneapolis, MN, [2020 was cancelled due to Covid, 2021 was virtual]; 2022, Providence, RI.

Association for Behavioral Analysis (ABA) Annual Convention: Chicago, June 1997.

Association of Christians in the Mathematical Sciences: Huntington University, June 2005.

Cognitive Science Society Annual Meeting: 1994, Atlanta, GA; 1995, Pittsburg, PA; 1996, San Diego, CA; 1997, Stanford, CA.

College Consortium for International Education (CCIE) Annual Faculty Symposium, "Globalization In Perspective": October 2001, Hanover College, Hanover, Indiana.

Consortium for Computing Sciences in Colleges:Central Plains (CCSC:CP): April 2003, Emporia State University, Emporia, Kansas; April 2010, Park University, Parkville, Missouri.

Consortium for Computing Sciences in Colleges:Midwest (CCSC:MW), Sept. 2002, Indiana Wesleyan University, IN; Sept. 2003, Dennison University, OH; Sept. 2005, Millikin University, IL; Sept. 2006, DePauw University, IN; Oct. 2009, St. Xavier University, IL; Oct. 2010, Franklin College, IN; Sept. 2011, Huntington University, IN; Sept. 2013, Findlay, OH; Sept. 2014, Olivet Nazarene University, IL.; Sept 2016, Taylor University, IN; Sept 2017, Calvin College, MI; Sept 2018, Ball State University, IN; Sept 2020, virtual/online; Oct 2021, Ivy Tech, IN; Oct 2022, University of Wisconsin-Stout, Menomonie, WI.

Consortium for Computing Sciences in Colleges: Southeast (CCSC:SE), Nov. 2001, Lipscombe University, Nashville, KY.

Consortium of Liberal Arts Colleges (CLAC) Summer Computer Conference: St. Paul, MN, 1991; Schenectady, NY, 1992; Atlanta, GA, 1997.

Council on Undergraduate Research (CUR)
Annual councilors' meeting: Wabash College, IN, 2005; DePauw University, IN, 2006.
Biennial conference: DePauw University, IN, 2006.

Duocon 2021, August 20, 2021, online conference. https://www.duolingo.com/duocon

Fort Wayne Teaching Conference, February 17, 2006, IUPFW, Fort Wayne, Indiana.

Indiana Horticultural Society Summer Meeting, June 26-27, 2001, The Apple Works, Trafalgar, IN.

International Conference on Computing in Missions: 1996, 2002, 2004, 2005, 2006, 2007, 2010 Upland, Indiana.

International Conference on Technology and Education: 1996, New Orleans, LA.

Lilly Teaching and Learning Conference: 2020, virtual.

Midwest Artificial Intelligence and Cognitive Science Conference: 1995, Carbondale, IL; 1996, Bloomington, IN; 1997, Dayton, OH; 2002, Chicago, IL; 2010, South Bend, IN.

Small Satellite Conference: 2017, 2018, Logan, Utah.

Society for Text and Discourse Annual Meeting: July 1996, San Diego, CA.

Technology for Teaching: August 2009, August 2010 (Taylor University, Upland, Indiana).

6th Extensive Reading World Congress, August 2023 (Denpasar, Indonesia).

Workshops and Seminars Attended

Designing Self-Care Practices and Reasonable Expectations for Faculty Work, Education Issues Seminar. 4/21/2022.

Course-in-a-Box: Big Data. CCSC:MW 2018, Muncie, Indiana.

Making Music with Computers: Creative Programming in Python. SIGCSE 2015, Kansas City, Missouri.

Program by Design: Bootstrap, TeachScheme, ReachJava, and Beyond. SIGCSE 2011, Dallas, Texas.

Teaching International Students. Sponsored by Taylor University Center for Teaching and Learning Excellence, taught by Jack Peterson (ESL) and Anila Karunakar (international student programs). Taylor University, September 2010 (Upland, Indiana).

Media Computing. NSF-sponsored workshop taught by Mark Guzdial and Barbara Erickson on the use of media computing as a means of attracting students to computer science and students in computer science. (Milwaukee, Wisconsin; March 2010)

ABET (originally, Accreditation Board for Engineering Technology) engineering accreditation workshop to prepare for accrediting computer engineering program at Taylor University (San Diego; Oct. 2005)

Kern Engineering Entrepreneurship Network (KEEN) Workshop; to study ways of integrating entrepreneurial activities into the curriculum and to begin a grant proposal for $50,000 for enhancing entrepreneurship in the curriculum at Taylor University. (Thunderbird University, Phoenix; Jan. 2006)

NSF Workshop for Predominantly Undergraduate Institutions, speaker Tom Vandergon. Taylor University, August 5, 2005.

Professional Activities

Campus Fulbright program representative for students and faculty, Taylor University, 2009-2012
College Board: Computer Science Advanced Placement Test grader (AP-CS) for Educational Testing Services (June 2003-2004, 2006-2007, 2010-2011, 2013-2015, 2017, table leader 2018, scoring leader 2020), early table leader (2023)
College Board: AP Computer Science A Standard Setting panel, 2016.
Member of Association for Computing Machinery (ACM and SIGCSE) 1997-present
Member of Consortium for Computing Sciences in Colleges (CCSC) 2002-present
Member of Council for Undergraduate Research (CUR) 2004-2007
Member of IEEE (Computer, Education Society) 1997-2014

Conference committee for CCSC:MW (2006-2007, 2010-2011, 2016, 2018- 2022)
Conference site chair, CCSC:MW 2016, Taylor University, Indiana
Paper reviewer for ACM SIGCSE (2002-2012, 2017)
Paper reviewer for CCSC:SE (2007, 2009)
Paper reviewer for CCSC:MW (2002-2005, 2009-2011, 2015, 2022)
Paper reviewer for ITiCSE (2007, 2009-2011)
Peer reviewer for Fulbright East Africa applications (Oct. 2009, Oct. 2010, Oct. 2011).
Textbook reviewer for Prentice-Hall (Jan. 2002)
Textbook proposal reviewer for Prentice-Hall (Aug. 2001)

Departmental Activities

Co-chair, Department of Computer Science and Engineering, June 2018-present.
Co-proposer of and participant in activities of Center for Missions Computing (along with Bill Toll and Tom Nurkkala) at Taylor University: Center officially came into existence in January, 2010. 2004-2009.
Member of a group of five that developed proposals for three new professional masters programs – two of which were implemented – at the University of Mauritius, November 2008- May 2009.
Sponsor for extremely successful ACM programming competition teams (best standing is fall 2002, 8th out of 131, defeating teams from CMU, University of Michigan at Ann-Arbor, Case Western Reserve): Taylor University, 1999-2003, 2005-2006. Valparaiso University, fall 2003.
Advisor for Computer Club: Taylor University, 1999-2003, 2005-2006.
Senior capstone examiner: Taylor University, 1999-2003, 2005-2008, 2009-2017.
Curricular initiatives: proposed a new track in major (Software Engineering) with emphasis on developing industrial quality software products for real customers, 2005-present. Lead experimental trial of curriculum, which has now become formalized and moved on to another to run the curriculum.
Academic advising of students: Illinois Institute of Technology, 1994-1996, 1998-1999; Taylor University, 2000-2003.
Curriculum review projects: Illinois Institute of Technology, 1995-1996; Taylor University, 2000, 2001, 2002.
Examiner: Illinois Institute of Technology, MS written comprehensive exams, 1994-1996, 1998-1999; Taylor University, senior comprehensive aural exams, 2000-2003, 2006-2008, 2010-2014.

Projects and Activities

Bible-verse memorization software research and coaching tool development project. (fall 2008-present)
Established project to automate assessment, grading, and feedback of assigned work for first year computer science students. (2002-2010)
Working to establish a standard platform and architecture that would routinely enable computer science textbook publishers and authors to deliver automated grading for textbook assignments. (2005-2010)
Leading development of a new software engineering concentration in the Taylor University computer science major. Participating students receive an in-house consulting company experience as they work for two years on real projects that have real clients. The goal is that each project will result in the delivery of industrial-quality software to the client. (2005-2010)
Participant in project to build TU SAT-1, a prototype satellite for low-cost e-mail communications for developing nations/non-profit groups, and for performing low-orbit gathering of atmospheric research data. Specific responsibilities include telemetry, email subsystem, and advising students on various programming projects. (02/2001 – 05/2006)
Submitted proposal to the National Science Foundation requesting $240K over three years to support a summer program training 10 undergraduate students per year in research and development in computer science and computer engineering. Rated competitive, but declined. (09/2005)
Led university-wide online e-commerce advancement project: outcomes include successfully setting up bookstore for online sales, establishing online banking partner for university, establishing registration and payment forms capability (e.g., homecoming and parents' weekend). (2004-2005 school year)
Part of team examining possibilities for establishing an entrepreneurial commercial research and development organization to support commercial and commercialization ventures by Taylor University faculty, students, and other constituents. (2005-present)

Non-Teaching Experience

Taylor University
Visits to Handong Global University, South Korea, March, 2017 and March 2018. Trips were to discuss possible Handong/Taylor "defined semesters" for student exchanges and explore other possibilities.

Campus Fulbright program representative for students and faculty, Taylor University, 2009-2012.

Faculty Vice-Moderator, 2010-2011.

Participant in project to build TU SAT-1, a prototype satellite for low-cost e-mail communications for developing nations/non-profit groups, and for performing low-orbit gathering of physics research data. Specific responsibilities included telemetry and email subsystem. Project has performed over 100 balloon launch tests to date. Participated 02/2001 – 2004.

Student practicum (internship) supervisor: 2000-2008, 2010-2011, 2013-present.

Led university-wide online e-commerce advancement project: successful outcomes include bookstore set up for online sales, online banking partner established, online registration and payment forms capability established (e.g., homecoming and parents' weekend): 2004-2005 school year.

Part of team examining possibilities for establishing an entrepreneurial commercial research and development organization to support commercial and commercialization ventures by Taylor University faculty, students, and other constituents: 2006.

Computer engineering accreditation (ABET) team. (2005-2008)

Programming contest team coach: 1999-2006.

MuKappa student group supporter.

Standing Committee Service:
> FDCIC: Faculty Development Committee and Interview Committee (2002-2003, 2016-present, chair 2017-2018, secretary 2018-2019)
> APC: Academic Policies Committee (2005-2008, secretary 2006-2007, chair 2007-2008)
> FPC: Faculty Personnel Committee (2009-2012)

Ad Hoc Committee Service:
> Colleagues College Planning Committee (2003)
> Forman Award Committee (spring 2003)
> Health Plan Task Force (2004)
> MK Scholarship Committee (2005-2008)
> Science Division Educational Issues Planning Committee (2000-2003, 2005-2008)
> Staff Employee of the Year Selection Committee (2005-2006)

Illinois Institute of Technology
> Responsible for organizing the department teaching assistants, 10/98 – 5/99

Valparaiso University
> Taught as visiting assistant professor during 2003-2004 academic year. Participated in department assessment activities and coached programming contest teams.

Wheaton College
> Academic Computing Coordinator, 1989-1993
> Established computer help desk for campus, 1988-1990
> Managed local area networks (LANs) and Internet connection, 1986-1998
> Managed two computer labs and 25-35 lab assistants, 1986-1988
> Managed UNIX and Novell systems, 1986-1998
> Part of team that designed and implemented the Wheaton College student services software (registrar, student accounts, housing, etc. – similar to ACT's Banner) using Informix products, 1988-1997

> Operating systems/networking experience

> - 12 years experience as system manager for various UNIX, Novell, Windows, MS-DOS, MacOS, VMS, TOPS-20.

> - 12 years experience as network manager for various TCP/IP, DECnet, Novell, LocalTalk network, Cisco routers, Cabletron LAN/VLAN campus infrastructure, and serial terminal protocols used for file sharing, email, remote access, and general Internet services.

Cultural and Travel Experience

United States. 1981-present. Lived in Minneapolis, Portland (OR), Houston, Cincinnati, Chicago area, Valparaiso (IN), Upland (IN). Interacted with a wide range of cultures, particularly as a student and then teacher at the Illinois Institute of Technology (Chicago: 1987-1999).

South Korea. August-December 2019. Spent a sabbatical at Handong Global University in Pohang learning Korean, learning more about and teaching HCI, and working on various projects.

Ecuador. August 2012-January 2013. Spent a sabbatical in Cuenca learning more Spanish and Android device programming.

Mauritius, Indian Ocean island. 1978-1981, 2008-2009. Continued high school by correspondence, interacted with strongly Asian culture and people of Asian, African, and European descent. Learned some Mauritian Creole.

Reunion Island (French territory), Indian Ocean. 1976-1978. Started high school by correspondence course from University of Nebraska, interacted with strongly French culture and people of European, African, and Asian descent. Fluent French speaking/reading.

South Africa. 1974-1976. Attended public schools in Pietermaritzburg, Natal Province. Opportunities to interact with Zulu and other African people groups, Indians, mixed-race, and Caucasian.

Angola, Africa. 1963-1973. Born in Angola and spent most of first 10 years there. Grades 1-5 by correspondence from USA, third grade simultaneously attended public schools in Portuguese. Achieved fluent spoken Portuguese.

General travel: eleven trips through Europe (especially France, England, Switzerland, and Germany, but including Scandinavia, Holland, Denmark, the Czech Republic, Iceland, Italy, Spain, and Portugal: 1981-2016), Australia (2019), South Korea (2017, 2018, 2019), Japan (2000), annual trips to Canada (1998-2015), Nigeria (2007), The Kingdom of Jordan (2022), Croatia (2022), Indonesia (2023).