

# Curriculum Vitae

## Charles D. Knutson

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## Education

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**Doctor of Philosophy (Ph.D.), Computer Science**, January 1998  
Oregon State University, Corvallis, Oregon, USA

- Dissertation: *Pattern Systems and Methodologies for Multiparadigm Analysis and Design*
- Advisors: Curtis R. Cook, Timothy A. Budd

**Master of Science (M.S.), Computer Science**, August 1994  
Brigham Young University, Provo, Utah, USA

- Dissertation: *TalkLib: An Object-Oriented Mechanism for Distributed Communication*
- Advisors: Scott N. Woodfield, Evan L. Ivie

**Bachelor of Science (B.S.), Computer Science**, 1988  
Brigham Young University, Provo, Utah, USA  
University of Iowa, Sep. 1982 – Dec. 1984

## Professional Experience

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**Founder, Chairman** (February 2013 – Present)  
*Kinpoint, Inc.*, Provo, Utah

*Kinpoint, Inc.* began inauspiciously in 2007 as a student project in the BYU Computer Science Department (originally dubbed “The 20-Minute Genealogist”). After a five-year incubation on campus, Kinpoint, Inc. launched as a corporation in early 2013. Kinpoint’s corporate mission is to enable the 95% of people who claim to have an interest in family history research and yet spend no time at all actually doing it. Kinpoint is committed to answering the question, “What would software have to do to enable me to be productive doing my own family history research in as little as 20 minutes a week?”

**Founder, Partner** (January 2013 – Present)  
*Ironwood Experts, LLC*, Salem, Utah

*Ironwood Experts* is a consulting firm providing support for software IP litigation (especially patent and trade secret cases). We have served as expert witnesses for some of the world’s leading technology companies. We also provide technical support including prior art search, claim charts, source code analysis and technical document review. We have served on cases in district courts, the International Trade Commission, the Federal Trade Commission and USPTO reexaminations. Ironwood Experts also provides software engineering consulting particularly focused on software process and software product quality. Ironwood also provides custom software testing services.

**Founder, Chairman, Podcast Host** (October 2007 – Present)  
*The Internet Safety Project*, Provo, Utah

*The Internet Safety Project* is a non-profit corporation dedicated to helping individuals navigate the intersections between technology and life. The Internet Safety Podcast is a popular audio program dealing with issues of Internet Safety across a broad range of topics. The Internet Safety Wiki is a collaborative information resource hosting thousands of articles focused on the full range of Internet Safety issues, providing a “one stop shop” for individuals concerned about issues of safety online.

**Associate Professor** (September 2006 – December 2014)  
*Brigham Young University, Computer Science Department*, Provo, Utah

Director, SEQuOIA (“Software Engineering Quality: Observation, Insight, Analysis”) Laboratory. Research interests in Software Engineering, Software Process, Software Quality, Software Management. Director, BYU Mobile Computing Laboratory, Wireless Data Communication (2000-2008).

**Assistant Professor** (July 2000 – August 2006)

*Brigham Young University, Computer Science Department, Provo, Utah*

Director, BYU Mobile Computing Laboratory. Research interests in Wireless Data Communications, Embedded Systems, Networking, Software Engineering, Software Quality, Software Management, Software Patterns, Multiparadigm Design.

**Senior Instructor** (September 1999 – June 2000)

*Oregon State University, Computer Science Department, Corvallis, Oregon*

Member of Software Engineering faculty. Responsibilities for developing and teaching graduate courses in Oregon Master of Software Engineering (OMSE) Program.

**Vice President, Research and Development** (October 1996 – August 1999)

*Counterpoint Systems Foundry, Inc., Corvallis, Oregon*

Guided and managed development of system and application software for infrared and Bluetooth data communications. Counterpoint was an early member and technical leader of the Infrared Data Association (IrDA), international industry consortium for infrared data communication. Counterpoint became a wholly-owned subsidiary of Extended Systems, Inc. in April 1997.

**Software Quality Consultant** (September 1994 – October 1996)

*ComSoft Consulting, Corvallis, Oregon*

Provided software consulting services including project management, analysis, design, development, testing, and documentation. Development in C, C++ and Assembly. Clients included Novell, Inc. and Intel Corporation.

**Development Engineer/Technical Lead** (August 1991 – September 1994)

*Novell, Inc., NetWare Products Division, Provo, Utah*

Developed Storage Management Services (SMS) Target Service Agent (TSA) for OS/2. Developed automated tools for advanced distributed testing. Development in C on DOS, OS/2 and NetWare.

**System Test Manager, Client Software** (April 1990 – August 1991)

*Novell, Inc., NetWare Products Division, Provo, Utah*

Managed seven System Test teams, including OS/2 Requester, Windows NetWare Drivers, DOS NetWare Shells, Communication Protocols, NetWare Lite, IBM Interoperability and OS/2 File Server. Managed 16 engineers.

**Columnist** (February 1990 – August 1990)

*LAN Times, McGraw-Hill, Midvale, Utah*

Monthly column on NetWare OS/2 Requester.

**Contributing Editor** (February 1990 – August 1990)

*NetWare Technical Journal, McGraw-Hill, Midvale, Utah*

Contributed articles, editing, and consultation.

**Development Engineer** (April 1988 – March 1989)

*Hewlett-Packard, Personal Computer Group, Sunnyvale, California*

OS/2 development team for the HP Vectra line of personal computers, assisting in adapting Microsoft OS/2 to Vectra platforms. Development in MASM and C.

**Instructor** (September 1988 – March 1989)

*Disabled Programmers, Inc., San Jose, California*

Developed and taught courses on UNIX Operating System, UNIX Shell Programming, C Programming Language, Relational Databases (emphasis on DB2), and Software Engineering.

**Instructor** (July 1988 – March 1989)

*National University, San Jose, California*

Developed and taught courses on Operating Systems (emphasis on Unix) and Comparative Programming Languages (emphasis on C, LISP, Forth).

**Instructor** (September 1987 – April 1988)

*Waterford Upper School, Provo, Utah*

Taught beginning and intermediate programming with Pascal.

**Programmer/Technical Writer** (April 1987 – January 1988)

*Signetics Corporation, Provo, Utah*

Maintained and documented interactive TTL circuit design package on Lillith personal computer. Programming in Modula II.

**Instructor** (July 1987 – August 1987)

Brigham Young University, Computer Science Department, Provo, Utah

Taught Introduction to Computer Architecture and Assembly Language Programming (emphasis on Motorola 6502 architecture).

**Director, Technical Development** (April 1986 – February 1987)

Innovative Courseware Design Corporation, Provo, Utah

Designed and supervised development of interactive educational software for IBM PC compatibles (VersaText and VersaText Authoring System).

## Publications

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### Academic Conference Publications

1. Sabrina Bailey, Sneha Godbole, Charles D. Knutson and Jonathan L. Krein. "A Decade of Conway's Law: A Literature Review." *Proceedings of the 3rd International Workshop on Replication in Empirical Software Engineering Research (RESER 2013)*, Baltimore, Maryland, October 9, 2013.
2. Kyle Blatter, T.J. Gledhill, Jonathan L. Krein and Charles D. Knutson. "Impact of Communication Structure on System Design: Towards a Controlled Test of Conway's Law." *Proceedings of the 3rd International Workshop on Replication in Empirical Software Engineering Research (RESER 2013)*, Baltimore, Maryland, October 9, 2013.
3. Alexander C. MacLean and Charles D. Knutson. "Apache Commits: Social Network Dataset." *Proceedings of the 10th Working Conference on Mining Software Repositories (MSR 2013)*, San Francisco, California, May 18-19, 2013.
4. Brandon Foushee, Jonathan L. Krein, Justin Wu, Randy Buck, Charles D. Knutson, Landon J. Pratt and Alexander C. MacLean. "Reflexivity, Raymond, and the Success of Open Source Software Development: A SourceForge Empirical Study." *Proceedings of the 17th International Conference on Evaluation and Assessment in Software Engineering (EASE 2013)*, Porto de Galinhas, Brazil, April 14-16, 2013.
5. Charles D. Knutson. "Motivational Interfaces, or, Everything I Need to Know about Family Trees I Learned from Angry Birds." *Proceedings of the 13th Annual Workshop on Technology for Family History and Genealogical Research*, Salt Lake City, Utah, March 21-23, 2013.
6. Charles D. Knutson and Daniel Zappala. "The Twenty Minute Genealogist: Assisting Family History Research through Navigation and Context Preservation." *Proceedings of the 12th Annual Workshop on Technology for Family History and Genealogical Research*, Salt Lake City, Utah, February 3, 2012.
7. Alexander C. MacLean, Landon J. Pratt, and Charles D. Knutson. "Knowledge Homogeneity and Specialization in the Apache HTTP Server Project." *Proceedings of the 7th International Conference on Open Source Systems (OSS 2011)*, Salvador, Brazil, October 6-7, 2011.
8. Alexander C. MacLean and Charles D. Knutson. "Open Source: From Mythos to Meaning." *Proceedings of the 7th International Conference on Open Source Systems (OSS 2011) Doctoral Consortium*, Salvador, Brazil, October 6-7, 2011.
9. Landon J. Pratt, Alexander C. MacLean, and Charles D. Knutson. "Cliff Walls: An Analysis of Monolithic Commits Using Latent Dirichlet Allocation." *Proceedings of the 7th International Conference on Open Source Systems (OSS 2011)*, Salvador, Brazil, October 6-7, 2011.
10. Quinn C. Taylor, Jonathan L. Krein, Alexander C. MacLean, and Charles D. Knutson. "An Analysis of Author Contribution Patterns in Eclipse Foundation Project Source Code." *Proceedings of the 7th International Conference on Open Source Systems (OSS 2011)*, Salvador, Brazil, October 6-7, 2011.
11. Scott H. Burton, Paul M. Bodily, Richard G. Morris, Charles D. Knutson, and Jonathan L. Krein. "Design Team Perception of Development Team Composition: Implications for Conway's Law." *Proceedings of the 2nd International Workshop on Replication in Empirical Software Engineering Research (RESER 2011)*, Banff, Alberta, Canada, September 21, 2011.
12. Jonathan L. Krein, Landon J. Pratt, Alan B. Swenson, Alexander C. MacLean, Charles D. Knutson, and Dennis L. Eggett. "Design Patterns in Software Maintenance: An Experiment Replication at Brigham Young University." *Proceedings of the 2nd International Workshop on Replication in Empirical Software Engineering Research (RESER 2011)*, Banff, Alberta, Canada, September 21, 2011.

13. Jonathan L. Krein, Patrick Wagstrom, Stanley M. Sutton Jr., Clay Williams, and Charles D. Knutson. "The Problem of Private Information in Large Software Organizations." *Proceedings of the International Conference on Software and Systems Process (ICSSP 2011)*, Honolulu, Hawaii, May 22, 2011.
14. Alexander C. MacLean, Landon J. Pratt, Jonathan L. Krein and Charles D. Knutson. "Trends That Affect Temporal Analysis Using SourceForge Data." *Proceedings of the Fifth International Workshop on Public Data about Software Development (WoPDaSD '10)*, Notre Dame, Indiana, June 2, 2010.
15. Charles D. Knutson, Jonathan L. Krein, Lutz Prechelt and Natalia Juristo. "1st International Workshop on Replication in Empirical Software Engineering Research (RESER)." *Proceedings of the 32nd ACM/IEEE International Conference on Software Engineering (ICSE '10)*, Cape Town, South Africa, May 4, 2010.
16. Jonathan L. Krein and Charles D. Knutson. "A Case for Replication: Synthesizing Research Methodologies in Software Engineering." *Proceedings of the First International Workshop on Replication in Empirical Software Engineering Research (RESER '10)*, Capetown, South Africa, May 4, 2010.
17. Alexander C. MacLean, Landon J. Pratt, Jonathan L. Krein and Charles D. Knutson. "Threats to Validity in Analysis of Language Fragmentation on SourceForge Data." *Proceedings of the First International Workshop on Replication in Empirical Software Engineering Research (RESER '10)*, Capetown, South Africa, May 4, 2010.
18. Daniel P. Delorey, Charles D. Knutson, and Mark Davies. "Mining Programming Language Vocabularies from Source Code." *Proceedings of the Psychology of Programming Interest Group Conference (PPIG 2009)*, Limerick, Ireland, June 24, 2009.
19. Jonathan L. Krein, Alexander C. MacLean, Daniel P. Delorey, Charles D. Knutson, and Dennis L. Eggett. "Language Entropy: A Metric for Characterization of Author Programming Language Distribution." *Proceedings of the Fourth Workshop on Public Data about Software Development (WoPDaSD 2009)*, Skovde, Sweden, June 6, 2009.
20. Jason Casebolt, Jonathan L. Krein, Alexander C. MacLean, Daniel P. Delorey, Charles D. Knutson. Challenge Paper: "Author Entropy vs. File Size in the GNOME Suite of Applications." *Proceedings of the 6<sup>th</sup> IEEE International Working Conference on Mining Software Repositories (MSR 09)*, Vancouver, British Columbia, Canada, May 23, 2009.
21. Charles D. Knutson and Jonathan Krein. "The 20-Minute Genealogist: A Context-Preservation Metaphor for Assisted Family History Research." *Proceedings of the 9th Annual Workshop on Technology for Family History and Genealogical Research*, Provo, Utah, March 12, 2009.
22. Qiuyi Duan, Lei Wang, Charles D. Knutson and Daniel Zappalla. "Autonomous and Intelligent Radio Switching for Heterogeneous Wireless Networks." *Proceedings of the Fourth IEEE International Workshop on Heterogeneous Multi-Hop Wireless and Mobile Networks 2008 (IEEE MHWMN'08)*, Atlanta, Georgia, September 29, 2008.
23. Quinn Taylor, James Stevenson, Daniel P. Delorey, and Charles D. Knutson. "Author Entropy: A Metric for Characterization of Software Authorship Patterns." *Proceedings of the Third Workshop on Public Data about Software Development (WoPDaSD 2008)*, Milan, Italy, September 10, 2008.
24. Qiuyi Duan, Lei Wang, Charles D. Knutson and Daniel Zappala. "Link Quality Prediction for Wireless Devices with Multiple Radios." *Proceedings of the Ninth IEEE International Symposium on a World of Wireless Mobile and Multimedia Networks (WoWMoM)*, Newport Beach, California, June 23-27, 2008.
25. Daniel P. Delorey, Charles D. Knutson, and Christophe Giraud-Carrier. "Programming Language Trends in Open Source Development: An Evaluation Using Data from All Production Phase SourceForge Projects." *Proceedings of the Second Workshop on Public Data about Software Development (WoPDaSD 2007)*, Limerick, Ireland, June 14, 2007.
26. Daniel P. Delorey, Charles D. Knutson, and Alex MacLean. "Studying Production Phase SourceForge Projects." *Proceedings of the Second Workshop on Public Data about Software Development (WoPDaSD 2007)*, Limerick, Ireland, June 14, 2007.
27. Daniel P. Delorey, Scott Chun, and Charles D. Knutson. "Do Programming Languages Affect Productivity? A Case Study Using Data from Open Source Projects." *Proceedings of the First International Workshop on Emerging Trends in FLOSS Research and Development (FLOSS 2007)*, Minneapolis, Minnesota, May 21, 2007.
28. Manoj Pandey, Daniel P. Delorey, Qiuyi Duan, Lei Wang, Charles D. Knutson, Daniel Zappala, Ryan Woodings. "RIA: An RF Interference Avoidance Algorithm for Heterogeneous Wireless Networks." *Proceedings of the IEEE Wireless Communication and Networking Conference (WCNC 2007)*, Hong Kong, March 11-15, 2007.
29. Qiuyi Duan, Lei Wang, Charles D. Knutson, and Michael A. Goodrich. "Axiomatic Multi-Transport Bargaining: A Quantitative Method for Dynamic Transport Selection in Heterogeneous Multi-Transport Wireless Environments." *Proceedings of the IEEE Wireless Communication and Networking Conference (WCNC 2006)*, Las Vegas, Nevada, April 3-6, 2006.

30. Timothy W. van der Horst, Tore Sundelin, Kent E. Seamons, and Charles D. Knutson. "Mobile Trust Negotiation: Authentication and Authorization in Dynamic Mobile Networks." *Proceedings of the Eighth IFIP TC-6 TC-11 Conference on Communications and Multimedia Security (CMS 2004)*, Cumbria, England, September 15-18, 2004.
31. Seth J. Nielson and Charles D. Knutson. "OO++: Exploring the Multiparadigm Shift." *Proceedings of the Workshop on Multiparadigm Programming with Object-Oriented Languages (MPOOL 2004)*, Oslo, Norway, June 15, 2004.
32. Charles D. Knutson, Ryan W. Woodings, Shannon B. Barnes, Heidi R. Duffin, and Jeffrey M. Brown. "Dynamic Autonomous Transport Selection in Heterogeneous Wireless Environments." *Proceedings of the IEEE Wireless Communication and Networking Conference (WCNC 2004)*, Atlanta, Georgia, March 21-25, 2004.
33. Heidi R. Duffin, Charles D. Knutson, and Michael A. Goodrich. "Prioritized Soft Constraint Satisfaction: A Qualitative Method for Dynamic Transport Selection in Heterogeneous Wireless Environments." *Proceedings of the IEEE Wireless Communication and Networking Conference (WCNC 2004)*, Atlanta, Georgia, March 21-25, 2004.
34. Casey T. Deccio, Joseph Ekstrom, D. Ryan Partridge, Kevin B. Tew, and Charles D. Knutson. "A Study of the Suitability of IrOBEX for High-Speed Exchange of Large Data Objects." *Proceedings of the IEEE Global Communications Conference 2003 (GLOBECOM 2003)*, San Francisco, California, December 1-5, 2003.
35. David K. Vawdrey, Tore L. Sundelin, Kent E. Seamons, and Charles D. Knutson. "Trust Negotiation for Authentication and Authorization in Healthcare Information Systems." *Proceedings of the 25<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Cancun, Mexico, September 17-21, 2003.
36. David K. Vawdrey, Eric S. Hall, and Charles D. Knutson. "A Self-Adapting Healthcare Information Infrastructure Using Mobile Computing Devices." *Proceedings of the 5<sup>th</sup> IEEE International Workshop in Enterprise Networking and Computing in Healthcare Industry (HealthCom 2003)*, Santa Monica, California, June 6-7, 2003.
37. Shannon B. Barnes, Ryan W. Woodings, and Charles D. Knutson. "Transport Discovery in Wireless Multi-Transport Environments." *Proceedings of the IEEE Wireless Communications and Networking Conference 2003 (WCNC 2003)*, New Orleans, Louisiana, March 17-19, 2003.
38. James C. Funk, Heidi R. Duffin, Lichen Dai, and Charles D. Knutson. "Inverse Multiplexing in Short-Range Multi-Transport Wireless Communications." *Proceedings of the IEEE Wireless Communications and Networking Conference 2003 (WCNC 2003)*, New Orleans, Louisiana, March 17-19, 2003.
39. Eric S. Hall, David K. Vawdrey, and Charles D. Knutson. "RF Rendez-Blue: Easing the Bluetooth Power and Delay Burdens in Mobile Systems." *Proceedings of the Eleventh IEEE International Conference on Computer Communications and Networks (IC3N '02)*, Miami, Florida, October 14-16, 2002.
40. James Funk and Charles D. Knutson. "Evaluating the Capacity of RLL Encoding for High Bandwidth Infrared Channels." *Proceedings of the 3rd International Symposium on Communication Systems, Networks and Digital Signal Processing (CSNDSP '02)*, Stafford, England, July 15-17, 2002.
41. Ryan Woodings, Derek Joos, Trevor Clifton, and Charles D. Knutson. "Rapid Heterogeneous Ad Hoc Connection Establishment: Accelerating Bluetooth Inquiry Using IrDA." *Proceedings of the Third Annual IEEE Wireless Communications and Networking Conference (WCNC '02)*, Orlando, Florida, March 18-21, 2002.
42. Michael G. Robertson, Scott V. Hansen, Franklin E. Sorenson, and Charles D. Knutson. "Modeling IrDA Performance: The Effect of IrLAP Negotiation Parameters on Throughput." *Proceedings of the Tenth IEEE International Conference on Computer Communications and Networks (ICCCN '01)*, Phoenix, Arizona, October 15-17, 2001.
43. Bradley J. Baird, Mark Clement, Charles D. Knutson, and Quinn Snell. "The Impact of Hardware Characteristics on Firewall Performance." *Proceedings of the 2001 International Symposium on Performance Evaluation of Computer and Telecommunication Systems*, Orlando, Florida, July 15-19, 2001.
44. Stephane Chatre, Charles D. Knutson, Dragos Margineantu, and Carsten Schulz-Key. "Improving DLX Performance by Taking Some of the Reduction out of RISC." *Proceedings of the Conference on Technical Informatics*, Timisoara, Romania, November 14-16, 1996.
45. Charles D. Knutson. "Where did the System Test Department Go? (Or Through the Hourglass and What Novell Found There)." *Proceedings of the Fourteenth Annual Pacific Northwest Software Quality Conference (PNSQC '96)*, Portland, Oregon, October 28-30, 1996.
46. Charles D. Knutson, Timothy A. Budd, and Curtis R. Cook. "Multiparadigm Patterns of Thought and Design." *Proceedings of the Third Annual Conference on the Pattern Languages of Programs (PLOP3)*, Monticello, Illinois, September 4-6, 1996.
47. Charles D. Knutson. "Software Testing in a Network Environment." *Proceedings of the International Conference on Achieving Quality in Software (AQUIS '91)*, Pisa, Italy, April 22-24, 1991.



## Academic Journal Publications

1. A. Curtis Thacker, Charles D. Knutson, Mark Dehmlow. *SPEC Kit 340: Open Source Software*. Association of Research Libraries, Washington, DC, July 2014.
2. Quinn Taylor, Christophe Giraud-Carrier and Charles D. Knutson. "Applications of Data Mining in Software Engineering." *International Journal of Data Analysis Techniques and Strategies (IJDATS)*, vol. 2, no. 3, pp. 243-257, July 2010.
3. Jonathan L. Krein, Alexander C. MacLean, Daniel P. Delorey, Charles D. Knutson and Dennis L. Eggett. "Impact of Programming Language Fragmentation on Developer Productivity: A SourceForge Empirical Study." *International Journal of Open Source Software and Processes (IJOSSP)*, vol. 2, no. 2, pp. 41-61, June 2010.
4. Seth James Nielson and Charles D. Knutson. "Design Dysphasia and the Pattern Maintenance Cycle." *Information and Software Technology*, vol. 48, no. 8, pp. 660-675, August 2006.

## Academic Magazine Publications

1. Charles D. Knutson, Jonathan L. Krein, Lutz Prechelt and Natalia Juristo. "Report from the 2nd International Workshop on Replication in Empirical Software Engineering Research (RESER 2011)." *SIGSOFT Software Engineering Notes*, vol. 37, no. 1, pp. 27-30, January 2012.
2. Charles D. Knutson, Jonathan L. Krein, Lutz Prechelt and Natalia Juristo. "Report from the 1st International Workshop on Replication in Empirical Software Engineering Research (RESER 2010)." *SIGSOFT Software Engineering Notes*, vol. 35, no. 5, pp. 42-44, September 2010.
3. David K. Vawdrey, Eric S. Hall, Charles D. Knutson, James K Archibald. "Enabling Remote Access to Personal Electronic Medical Records." *IEEE Engineering in Medicine and Biology Magazine*, vol. 22, no. 2, May/June 2003.
4. Charles D. Knutson, David K. Vawdrey, Eric S. Hall. "Bluetooth: An Emerging Technology for Wireless Personal Area Networks." *IEEE Potentials Magazine*, October/November, 2002.
5. Charles D. Knutson, Timothy A. Budd, and Hugh Vidos. "Multiparadigm Design of a Simple Relational Database." *ACM SIGPLAN Notices*, 35(12):51-61, December 2000.

## Tutorials and Panels

1. Gordon Clarke (Moderator), Jill Crandell, Bill Harten, Charles D. Knutson, Michael Ritchey, Justin York (Panelists), "Game-Changing Trends in Simplifying Research Tools for the Masses (Panel)." *RootsTech*, Salt Lake City, Utah, February 6, 2014.
2. Gordon Clarke (Moderator), Tom Auga, Doug Butts, Scott Carlson, Pierre Cloutier, Janet Horvoka, Charles D. Knutson, Matt Misbach (Panelists), "Tree Access (Panel)." *Family History and Technology Conference (RootsTech 2013)*, Salt Lake City, Utah, March 21, 2013.
3. Charles D. Knutson (Moderator), Roberto Aiello, Nick Epperson, Larry Mittag, Darrell Simms (Panelists), "Wireless Personal Area Networks (Panel)." *Proceedings of the 2002 International Telemetering Conference*, San Diego, California, October 21-24, 2002.
4. Charles D. Knutson. "Short-Range Ad Hoc Point-to-Point Wireless Communication: Standards from the Infrared data Association (IrDA)." Tutorial presented at *The ACM SIGMOBILE Seventh Annual International Conference on Mobile Computing and Networking (MobiCom '01)*, Rome, Italy, July 16-21, 2001.

## Trade Conference Publications

1. Glade Diviney and Charles D. Knutson. "Introduction to Short-Range Wireless Data Communications." *Proceedings of the 2005 Embedded Systems Conference*, San Francisco, California, March 6-10, 2005. (Reprinted from ESC 2004 Proceedings.)
2. Charles D. Knutson and Sam Carmichael. "Verification and Validation for Embedded Software." *Proceedings of the 2005 Embedded Systems Conference*, San Francisco, California, March 6-10, 2005. (Reprinted from ESC 2001 Proceedings.)
3. Glade Diviney and Charles D. Knutson. "Introduction to Short-Range Wireless Data Communications." *Proceedings of the 2004 Embedded Systems Conference*, San Francisco, California, March 29-April 1, 2004.

4. Charles D. Knutson and Sam Carmichael. "Verification and Validation for Embedded Software." *Proceedings of the 2004 Embedded Systems Conference*, San Francisco, California, March 29-April 1, 2004. (Reprinted from ESC 2001 Proceedings.)
5. Charles D. Knutson. "Infrared Data Communications with IrDA: A Tutorial." *Proceedings of the 2002 Embedded Systems Conference*, San Francisco, California, March 12-16, 2002. (Reprinted from ESC 2001 Proceedings)
6. Charles D. Knutson and Sam Carmichael. "Verification and Validation for Embedded Software." *Proceedings of the 2002 Embedded Systems Conference*, San Francisco, California, March 12-16, 2002. (Reprinted from ESC 2001 Proceedings.)
7. Charles D. Knutson. "Fundamentals of Wireless Personal Area Networks (WPANs) for Portable Device Designers." *Proceedings of the 2002 Portable Design Conference*, Santa Clara, California, January 15-17, 2002.
8. Charles D. Knutson and Sam Carmichael. "Verification and Validation for Embedded Software." *Proceedings of the 2001 Embedded Systems Conference*, San Francisco, California, April 9-13, 2001. (Reprinted from ESC 2000 Proceedings.)
9. Charles D. Knutson. "Infrared Data Communications with IrDA: A Tutorial." *Proceedings of the 2001 Embedded Systems Conference*, San Francisco, California, April 9-13, 2001. (Reprinted from ESC 2000 Proceedings.)
10. Charles D. Knutson and Sam Carmichael. "Safety Critical Issues for Embedded Software." *Proceedings of the 2000 Embedded Systems Conference*, San Jose, California, September 24-28, 2000.
11. Charles D. Knutson and Sam Carmichael. "Verification and Validation for Embedded Software." *Proceedings of the 2000 Embedded Systems Conference*, San Jose, California, September 24-28, 2000.
12. Charles D. Knutson. "Infrared Data Communications with IrDA: A Tutorial." *Proceedings of the 2000 Embedded Systems Conference*, San Jose, California, September 24-28, 2000. (Reprinted from ESC 1999 Proceedings.)
13. Charles D. Knutson. "IrDA Application Profile: Point and Shoot." *Proceedings of the Seventh Annual Portable by Design Conference*, San Jose, California, February 22-25, 2000.
14. Charles D. Knutson. "Infrared Data Communications with IrDA: A Tutorial." *Proceedings of the 1999 Embedded Systems Conference*, San Jose, California, September 26-30, 1999.
15. Anthony Gregory, Lee Glover, Charles D. Knutson. "HP JetSend Mobile Technology." *Proceedings of the 1999 Embedded Systems Conference Summer*, Danvers, Massachusetts, June 28-30, 1999.
16. Charles D. Knutson and Brad Folsom. "IrMC: Infrared Solutions for Mobile Communications." *Proceedings of the 1999 Embedded Systems Conference Summer*, Danvers, Massachusetts, June 28-30, 1999.
17. Charles D. Knutson and Dan Pinson. "IrDA for Embedded Devices." *Proceedings of the Wind River Systems Developer Conference*, San Francisco, California, May 10-13, 1999.
18. Charles D. Knutson, Eng Tan, and Glade Diviney. "IrReady: IrDA Interoperability Update." *Proceedings of the Sixth Annual Portable by Design Conference*, San Jose, California, February 22-26, 1999.
19. Charles D. Knutson and Glade Diviney. "Infrared Data Communications with IrDA." *Proceedings of the International Conference and Exhibition on Portable Design*, San Diego, California, February 1-4, 1999.
20. Charles D. Knutson and Glade Diviney. "Walk Up, Point and Shoot: IrDA Interoperability." *Proceedings of the International Conference and Exhibition on Portable Design*, San Diego, California, February 1-4, 1999.
21. Charles D. Knutson. "Infrared Communications in Embedded Devices." *Proceedings of the Wind River Systems Developers Conference*, San Francisco, California, May 11-13, 1998.
22. Patrick J. Megowan, David W. Suvak, and Charles D. Knutson. "IrDA Infrared Communications: An Overview." *Proceedings of the Fifth Annual Embedded Systems Conference East*, Boston, Massachusetts, March 10-12, 1997.

## Book Publications

1. Charles D. Knutson. *Digital Mists of Darkness*. [Online edition](#). Print edition pending. 2014.
2. Charles D. Knutson with Jeffrey M. Brown. *IrDA Principles and Protocols: The IrDA Library, Volume 1*. Salem, Utah: MCL Press, 2004.
3. Edward Leibing, Charles D. Knutson, and Michael Day. *NetWare Workstation Troubleshooting & Maintenance Handbook*. New York: McGraw-Hill, 1990.

## Standards Documents

1. Nick Thomas (Editor), Amitabh Awasthi, Murray Baker, Ron Brown, Ben Bostwick, Bill Chen, Ray Chock, Jae Chyun, Peter Eastwood, Nick Epperson, Lawrence Falkner, Damon González, Charles D. Knutson, Dan McKay, Brett McCleary, Gavin Peacock, Jagdeep Sahota, Dave Suvak, Nick Thomas, Merul Patel (Contributors). "Infrared Financial Messaging Point and Pay Profile revision 1.0." *Infrared Data Association*, Walnut Creek, California, January 29, 2002.
2. Charles D. Knutson (Editor), Yoshinobu Akimoto, Pete Bramhall, Eric Edwards, Melinda Grant, Bryce Jeppsen, Gontaro Kitazumi, Yusuke Kushida, Rob Lockhart, Tim Looney, Lars Novak, Hiroshi Ono, Gary Parham, Gavin Peacock, James Scales, Mike Sloane, Richard Stow, David Suvak (Contributors). "IrDA Point and Shoot Profile revision 1.0." *Infrared Data Association*, Walnut Creek, California, January 12, 2000.
3. Mitsuji Matsumoto (Author), Ken-ichiro Shimokura, Tatsuo Arai, Don Liechty, Gontaro Kitazumi, Shuichiro Ono, Takahiro Imai, Akihiro Kikuchi (Key Contributors), Charles D. Knutson, Eng Tan, Keming Yeh, Toshihiko Wakahara, Taku Onishi, Mizue Watanabe (Contributors). "Infrared Data Association IrTran-P: Infrared Picture Transfer, Conformance Tests and InterOperability Tests Guideline, revision 1.0." *Infrared Data Association*, Walnut Creek, California, April 12, 1999.
4. Stephen Holmstead (Author), Kris Dahl, Anthony Gregory, Charles D. Knutson, Jeff Kunz, Pat Megowan, Adrian Pfisterer, Kevin Smith, David Suvak (Contributors). "JetSend Protocol on IrDA Application Note, revision 1.0." *Infrared Data Association*, Walnut Creek, California, January 28, 1999.
5. Charles D. Knutson (Editor), Yoshinobu Akimoto, Chuck Branson, Tom Brough, Lawrence Faulkner, Vanessa Hutchison, Dave Jollota, Dave Lehman, Kerry Lynn, Mitsuji Matsumoto, Pat Megowan, John Petrilla, Eng Tan, Lichen Wang, Maru Wang, Keming Yeh (Contributors). "Infrared Data Association Interoperability Test Plan and Process, revision 1.2." *Infrared Data Association*, Walnut Creek, California, September 28, 1998.
6. Eng Tan (Editor), Yoshinobu Akimoto, Chuck Branson, Lawrence Faulkner, Vanessa Hutchison, Dave Jollota, Charles D. Knutson, Dave Lehman, Kerry Lynn, Mitsuji Matsumoto, Pat Megowan, John Petrilla, Lichen Wang, Maru Wang, Keming Yeh (Contributors). "Infrared Data Association Interoperability Test Plan and Process, revision 1.0." *Infrared Data Association*, Walnut Creek, California, February 28, 1998.

## Technical Reports

1. Alan B. Swenson, Derrick J. Brinton, Charles D. Knutson, Jonathan L. Krein and Jonathan King. "You Posted What?! The Slippery Slope of Online Teenage Visual Self-Disclosure." Brigham Young University, SEQuOIA Laboratory, Technical Report BYU-SEQ-11-01, February 2011.
2. Ryan W. Woodings, Shannon B. Barnes and Charles D. Knutson. "Transport Independence and Multi-Transport Issues in Protocol Design," Brigham Young University, Mobile Computing Laboratory, Technical Report BYU-MCL-02-02, September, 2002.
3. Shannon B. Barnes and Charles D. Knutson. "Transport Information Exchange Using Native Service Discovery Mechanisms," Brigham Young University, Mobile Computing Laboratory, Technical Report BYU-MCL-02-01, September, 2002.
4. Charles D. Knutson, Scott N. Woodfield, and Ben Brown. "Suitability Criteria for LAN-based Unconstrained Distributed Objects." Technical Report 97-60-5, Oregon State University, 1997.
5. Charles D. Knutson, Hugh Vidos, and Timothy A. Budd. "Multiparadigm Design of a Relational Database: A Preliminary Study." Technical Report 97-60-1, Oregon State University, 1997.
6. Charles D. Knutson, Timothy A. Budd, and Curtis R. Cook. "Multiparadigm Iteration Patterns." Technical Report 96-60-14, Oregon State University, 1996.

## Trade Journal Publications

1. Charles D. Knutson, Ryan W. Woodings, Derek Joos. "Access Isn't Always the Killer Application." *Wireless Systems Design*, December, 2004.
2. Charles D. Knutson and Sam Carmichael. "Verification and Validation." *Electronic Engineering Times - China*, July 15, 2002. (Chinese translation. Reprinted from *Embedded Systems Programming*.)
3. Charles D. Knutson and Sam Carmichael. "Verification and Validation." *Electronic Engineering Times - Korea*, June 1-15, 2002. (Korean translation. Reprinted from *Embedded Systems Programming*.)
4. Charles D. Knutson and Sam Carmichael. "Verification and Validation." *Electronic Engineering Times - Asia*, June, 2002. (Reprinted from *Embedded Systems Programming*.)



5. Charles D. Knutson and Sam Carmichael. "Verification and Validation." *Embedded Systems Programming*, 14(6):24-36, June 2001.
6. Charles D. Knutson. "Just My Opinion: Guest Editorial." *The IrDA Bulletin*, 3(1), January 2001.
7. Charles D. Knutson and Sam Carmichael. "Safety First: Avoiding Software Mishaps." *Embedded Systems Programming*, 13(12):28-40, November, 2000.
8. Charles D. Knutson. "Infrared Communications with IrDA." *Embedded Systems Programming*, 13(6):69-86, June, 2000.
9. Charles D. Knutson. "Tips for Successful IrDA Design." *Portable Design Magazine*, 5(6):46, June 1999.
10. Charles D. Knutson. "The Promise of IrDA." *Communications Systems Design*, 4(7):72, July, 1998.
11. Patrick J. Megowan, David W. Suvak, and Charles D. Knutson. "Overview of IrDA Specifications, Part 2." *ComputerOEM Online*, June 29, 1998. (Reprinted from Wireless Design Online)
12. Patrick J. Megowan, David W. Suvak, and Charles D. Knutson. "Overview of IrDA Specifications, Part 1." *ComputerOEM Online*, June 8, 1998. (Reprinted from Wireless Design Online)
13. Patrick J. Megowan, David W. Suvak, and Charles D. Knutson. "Overview of IrDA Specifications, Part 2." *Medical Design Online*, June 1, 1998. (Reprinted from Wireless Design Online)
14. Patrick J. Megowan, David W. Suvak, and Charles D. Knutson. "Overview of IrDA Specifications, Part 2." *Wireless Design Online*, May 27, 1998.
15. Patrick J. Megowan, David W. Suvak, and Charles D. Knutson. "Overview of IrDA Specifications, Part 1." *Medical Design Online*, May 15, 1998. (Reprinted from Wireless Design Online)
16. Patrick J. Megowan, David W. Suvak, and Charles D. Knutson. "Overview of IrDA Specifications, Part 1." *Wireless Design Online*, May 15, 1998.
17. Charles D. Knutson. "WinProbe 95." *PC Computing*, 10(5):240, May, 1997.
18. Charles D. Knutson. "Fix-It." *PC Computing*, 10(5):230, May, 1997.
19. Charles D. Knutson. "Qwirks." *PC Computing*, 10(4):219, April, 1997.
20. Charles D. Knutson. "LucasArts Afterlife." *PC Computing*, 10(3):206, March, 1997.
21. Charles D. Knutson. "Building the Model Network." *Byte*, 21(10):101-104, October, 1996.
22. Charles D. Knutson. "Developing Quality." *Byte*, 21(9):93-96, September, 1996.
23. Charles D. Knutson. "Application Testing Improves on Networks." *LAN Times*, 8(7):41-45, April 1, 1991.
24. Charles D. Knutson. "Installing the OS/2 Requester, Part 2." *LAN Times*, 7(7):100-102, July, 1990.
25. Charles D. Knutson. "Manipulating the Bindery from the OS/2 Requester." *NetWare Technical Journal*, 2(3):117-121, July, 1990.
26. Charles D. Knutson. "Installing the OS/2 Requester, Part 1." *LAN Times*, 7(6):108-109, June, 1990.
27. Charles D. Knutson. "Getting OS/2 Up and Running." *LAN Times*, 7(5):100-104, May, 1990.
28. Charles D. Knutson. "Connecting OS/2 to NetWare." *LAN Times*, 7(5):62-64, May, 1990.
29. Charles D. Knutson. "NetWare Utilities for OS/2." *LAN Times*, 7(4):94-95, April, 1990.
30. Matthew G. Brooks and Charles D. Knutson. "The NetWare Requester Meets OS/2 v1.2." *NetWare Technical Journal*, 2(2):115-118, April, 1990.
31. Charles D. Knutson. "Tech Talk--OS/2 SQL Engines and NetWare LANs." *InfoWorld*, March, 1990.
32. Charles D. Knutson. "OS/2 Workstation Hardware." *LAN Times*, 7(3):103-106, March, 1990.
33. Charles D. Knutson. "NetWare Requester for OS/2." *LAN Times*, 7(2):95-97, February, 1990.
34. Charles D. Knutson. "Writing to SPX for OS/2." *NetWare Technical Journal*, 2(1):67-72, January, 1990.
35. Danny Brand and Charles D. Knutson. "Novell Named Pipes." *SQL Server Environment*, September, 1989.
36. Charles D. Knutson. "Working on the Pipeline." *NetWare Technical Journal*, 1(3):90-99, July, 1989.

## Other Magazine Publications

1. Charles D. Knutson and Kyle K. Oswald. ["Just a Game?"](#) *Ensign*, 39(8):46-51, August, 2009.

## Selected Web-Based Publications

1. Charles D. Knutson. ["Teaching children to swim in technological waters."](#) *Mormon Times*, November 5, 2010.
2. Charles D. Knutson. ["Puzzle-Solving: Not the driving function of software construction."](#) *Dr. K's Software Ruminations*, October 25, 2010.
3. Charles D. Knutson. ["Welcome to the new Internet Safety Project!"](#) *The Internet Safety Project Blog*, October 21, 2010.
4. Charles D. Knutson. ["Technology: A modern double-edged sword."](#) *Mormon Times*, October 20, 2010.
5. Charles D. Knutson. ["Puzzle-solving interview questions: How you do it can't save you."](#) *Dr. K's Software Ruminations*, October 14, 2010.
6. Charles D. Knutson. ["Puzzle-solving interview questions: You get what you ask for!"](#) *Dr. K's Software Ruminations*, October 7, 2010.
7. Charles D. Knutson. ["Programming, gender, and masculine metaphors."](#) *Dr. K's Software Ruminations*, September 26, 2010.
8. Charles D. Knutson. ["Rudy: An iTunes love story."](#) *Dr. K's Software Ruminations*, June 9, 2010.
9. Charles D. Knutson. ["Chick-Fil-A Labor Day Giveaway: FAIL!"](#) *Dr. K's Software Ruminations*, September 7, 2009.
10. Charles D. Knutson. ["Text messaging is not the devil."](#) *Dr. K's Software Ruminations*, August 30, 2009.
11. Charles D. Knutson. ["The Walmart cashier and cell phone \(dis\)courtesy."](#) *Dr. K's Software Ruminations*, December 3, 2008.
12. Charles D. Knutson. ["Commencement speech, ITT Technical Institute-Murray."](#) *Dr. K's Software Ruminations*, June 7, 2008.
13. Charles D. Knutson. ["Your mom goes to Facebook."](#) *Dr. K's Software Ruminations*, October 6, 2007.
14. Charles D. Knutson. ["That's not the real Mona Lisa..."](#) *Dr. K's Software Ruminations*, August 11, 2007.
15. Charles D. Knutson. ["Support chat – From the sublime to the ridiculous."](#) *Dr. K's Software Ruminations*, August 3, 2007.
16. Charles D. Knutson. ["Computer Science seniors: We've taught you to write... um... code."](#) *Dr. K's Software Ruminations*, July 17, 2007.
17. Charles D. Knutson. ["Professional software developers: Nature or nurture?"](#) *Dr. K's Software Ruminations*, July 3, 2007.
18. Charles D. Knutson. ["Bluetooth: The happy pulse says I'm ready... ready... ready..."](#) *Dr. K's Software Ruminations*, June 21, 2007.
19. Charles D. Knutson. ["On the digital road in Oregon: All your crab are belong to us."](#) *Dr. K's Software Ruminations*, May 16, 2007.
20. Charles D. Knutson. ["Never solve a personnel problem with a policy."](#) *Dr. K's Software Ruminations*, March 14, 2007.

## Selected Television and Radio Appearances

1. Interview, The Morning Show, BYU Radio SiriusXM Satellite Radio Channel 143. Host: Marcus Smith. January 19, 2015.
2. Interview, The Morning Show, BYU Radio SiriusXM Satellite Radio Channel 143. Host: Marcus Smith. June 19, 2013.
3. Interview, The Morning Show, BYU Radio SiriusXM Satellite Radio Channel 143. Host: Don Shelline. January 22, 2013.
4. Interview, CBC Information Radio 89.3 FM/990 AM, Winnipeg, Manitoba. Host: Marcy Markusa. February 29, 2012.
5. BYUtv, "Insight with Jon Du Pre: Parenting in Cyberspace." Host: Jon Du Pre. June 2011.

6. BYUtv, Education Week Broadcast, "[Just A Game? When Virtual Reality Becomes Our Children's Reality.](#)" August, 2010.
7. KSL Radio news story, "Teen Texting." Reporter: Jill Hansen. September 1, 2009.
8. KBYU-FM Classical 89, "[Thinking Aloud: Way Too Wired and Overly Connected.](#)" Host: Marcus Smith. April 8, 2009.

## Patents

1. United States Patent No. 8,452,805. Charles D. Knutson, Jonathan L. Krein, Daniel Zappala, Daniel P. Delorey. "Genealogy context preservation." Issued: May 28, 2013.
2. United States Patent No. 7,236,742. Eric S. Hall, David K. Vawdrey, Charles D. Knutson. "System and method for wireless data transfer for a mobile unit." Issued: June 26, 2007.

## Students Advised

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### Doctoral Dissertations Supervised – BYU SEQuOIA Lab

1. Jonathan L. Krein, *Replication and Knowledge Production in Empirical Software Engineering Research*. Doctoral Dissertation, Brigham Young University, December 2014.

### Master's Theses Supervised – BYU SEQuOIA Lab

1. Brandon Foushee. "Prevalence of Reflexivity and Its Impact on Success in Open Source Software Development: An Empirical Study." Master's Thesis, Brigham Young University, April, 2013.
2. Landon J. Pratt. "Cliff Walls: Threats to Validity in Empirical Studies of Open Source Forges." Master's Thesis, Brigham Young University, February, 2013.
3. Quinn C. Taylor. "Analysis and Characterization of Author Contribution Patterns in Open Source Software Development." Master's Thesis, Brigham Young University, March, 2012.
4. Alexander C. MacLean. "Commit Patterns and Threats to Validity in Analysis of Open Source Software Repositories." Master's Thesis, Brigham Young University, February, 2012.
5. Jonathan L. Krein. "Programming Language Fragmentation and Developer Productivity: An Empirical Study." Master's Thesis, Brigham Young University, December, 2011.
6. Scott B. Chun. "A Reusable Persistence Framework for Replicating Empirical Studies on Data from Open Source Repositories." Master's Thesis, Brigham Young University, April 2011.
7. Daniel P. Delorey. "Observational Studies of Software Engineering Using Data from Software Repositories." Master's Thesis, Brigham Young University, April 2007.
8. Seth Nielson. "OO++ Design Patterns: GOF Revisited." Master's Thesis, Brigham Young University, December, 2004.

### Doctoral Dissertations Supervised – BYU Mobile Computing Lab

1. Qiuyi Duan. "Autonomous and Intelligent Radio Switching." Doctoral Dissertation, Brigham Young University, December 2008.

### Master's Theses Supervised – BYU Mobile Computing Lab

1. Lei Wang. "A Performance Evaluation of Dynamic Transport Switching for Multi-Transport Devices." Master's Thesis, Brigham Young University, December 2006.
2. Jeffrey L. Barlow. "Characterizing Dynamic Power and Data Rate Policies for Wireless USB Networks." Master's Thesis, Brigham Young University, August 2006.
3. Gregory A DeHart. "Brand X, A Cross-Layer Architecture for Quality of Transport (QoT)." Master's Thesis, Brigham Young University, August 2006.
4. James C. Funk. "Rate-Adaptive Runlength Limited Encoding for High-Speed Infrared Communication." Master's Thesis, Brigham Young University, September 2005.

5. Christopher L. Bauer. "Modelling FHSS and DSSS Mutual Interference in ISM Radio Frequency Bands." Master's Thesis, Brigham Young University, December 2004.
6. Heidi Ruth Duffin. "A Qualitative Method for Dynamic Transport Selection in Heterogeneous Wireless Environments." Master's Thesis, Brigham Young University, August 2004.
7. David K. Vawdrey. "A Self-Adapting Healthcare Information Infrastructure Using Mobile Computing Devices." Master's Thesis, Brigham Young University, June 2003.
8. Eric S. Hall. "Architecture of a Wireless Power-Efficient Smart Card." Master's Thesis, Brigham Young University, April 2003.
9. Bradley Baird. "Evaluation of Firewall Performance Characteristics: A Hardware and Software Based Approach." Master's Thesis, Brigham Young University, December 2002.
10. Shannon B. Barnes. "Transport and Service Discovery in Wireless Multi-Transport Environments." Master's Thesis, Brigham Young University, December 2002.
11. Ryan Winfield Woodings. "Quality of Transport (QoT): Dynamic Transport Switching in Wireless Personal Area Networks." Master's Thesis, Brigham Young University, December 2002.
12. Derek D. Joos. "Modeling Shared Radio Frequency Band Utilization of Colocated Heterogeneous Wireless Technologies." Master's Thesis, Brigham Young University, December 2002.

### **Undergraduate Honors Theses Supervised – BYU Computer Science Department**

1. Derrick Brinton. "Implementing a Collaborative Recommender System for the Brigham Young University Harold B. Lee Library." Honors Thesis, Brigham Young University, December 2012.

## **Honors, Affiliations and Positions**

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### **Conferences**

- Program Committee, The 8th International Symposium on Empirical Software Engineering and Measurement (ESEM), Torino, Italy, September 18-19, 2014.
- Program Committee, The International Symposium on Open Collaboration (OpenSym), Berlin, Germany, August 27-29, 2014.
- Program Committee, Programming Interest Group Conference (PPIG), Brighton, England, June 25-27, 2014.
- Program Committee, International Conference on Evaluation and Assessment in Software Engineering (EASE), London, England, May 13-14, 2014.
- General Co-Chair, Organizing Committee, Third International Workshop on Replication in Empirical Software Engineering Research (RESER), Baltimore, Maryland, October 9, 2013.
- Program Committee, Joint International Symposium on Open Collaboration (OpenSym), Hong Kong, China, August 5-7, 2013.
- Program Committee, Tenth Working Conference on Mining Software Repositories (MSR) Data Track, San Francisco, California, May 18-19, 2013.
- Session Chair, International Conference on Evaluation and Assessment in Software Engineering (EASE), Recife, Brazil, April 14-16, 2013.
- Program Committee, International Conference on Evaluation and Assessment in Software Engineering (EASE), Recife, Brazil, April 14-16, 2013.
- Organizing Committee, Publications Co-Chair, International Conference on Open Source Systems (OSS), Hammamet, Tunisia, September, 2012.
- Organizing Committee, Doctoral Consortium Co-Chair, International Conference on Open Source Systems (OSS), Hammamet, Tunisia, September, 2012.
- Program Committee, International Conference on Open Source Systems (OSS), Hammamet, Tunisia, September, 2012.

Technical Program Committee, International Conference on Open Source Systems (OSS), Salvador, Bahia, Brazil, October, 2011.

Session Chair, International Conference on Open Source Systems (OSS), Salvador, Bahia, Brazil, October, 2011.

General Co-Chair, Organizing Committee, Second International Workshop on Replication in Empirical Software Engineering Research (RESER), Banff, Alberta, Canada, September, 2011.

Session Chair, Second International Workshop on Replication in Empirical Software Engineering Research (RESER), Banff, Alberta, Canada, September, 2011.

Technical Program Committee, Programming Interest Group Conference (PPIG), York, England, September, 2011.

Technical Program Committee, IEEE International Conference on Program Comprehension (ICPC), Kingston, Ontario, Canada, June, 2011.

Technical Program Committee, Programming Interest Group Conference (PPIG), Madrid, Spain, September, 2010.

Technical Program Committee, The Fifth Workshop on Public Data about Software Development (WoPDaSD), Notre Dame, Indiana, June, 2010.

General Co-Chair, Organizing Committee, First International Workshop on Replication in Empirical Software Engineering Research (RESER), Capetown, South Africa, May, 2010.

Technical Program Committee, The Fourth Workshop on Public Data about Software Development (WoPDaSD), Sweden, 2009.

Technical Program Committee, Programming Interest Group Conference (PPIG), Limerick, Ireland, June, 2009.

Publications Chair, Organizing Committee, The Sixth IEEE Wireless Communications and Networking Conference (WCNC), New Orleans, Louisiana, March 13-17, 2005.

Session Chair, The Fifth IEEE Wireless Communications and Networking Conference (WCNC), Atlanta, Georgia, March 21-25, 2004.

Technical Program Committee, The Fifth IEEE Wireless Communications and Networking Conference (WCNC), Atlanta, Georgia, March 21-25, 2004.

Technical Program Committee, The Twelfth IEEE International Conference on Computer Communications and Networks (IC3N), Dallas, Texas, October 20-22, 2003.

Technical Program Committee, IEEE Vehicular Technology Conference 2003 Symposium on Integrated Heterogeneous Wireless Networks, Orlando, Florida, October 4-9, 2003.

IEEE TCCC Representative to INFOCOM 2003, San Francisco, California, March 30-April 3, 2003

Technical Program Committee, The Fourth IEEE Wireless Communications and Networking Conference (WCNC), New Orleans, Louisiana, March 17-19, 2003

Technical Program Committee, IEEE Symposium on Ad Hoc Wireless Networks (SAWN) 2002 in conjunction with GLOBECOM 2002, Taipei, Taiwan, November 17-21, 2002

Reviewer, GLOBECOM 2002 General Symposium, Taipei, Taiwan, November 17-21, 2002

Panel Moderator, International Telemetering Conference (ITC '02), San Diego, California, October 21-24, 2002

Session Chair, The Eleventh IEEE International Conference on Computer Communications and Networks (IC3N), Miami, Florida, October 14-16, 2002

Technical Program Committee, The Eleventh IEEE International Conference on Computer Communications and Networks (IC3N), Miami, Florida, October 14-16, 2002

Session Chair, The Tenth IEEE International Conference on Computer Communications and Networks (ICCCN), Phoenix, Arizona, October 15-17, 2001

Technical Program Committee, Pacific Northwest Software Quality Conference (PNSQC) 2001, Portland, Oregon, October 15-17, 2001

Reviewer, ACM Symposium on Mobile Ad Hoc Networking & Computing (MobiHoc) 2001, Long Beach, California, October 4-5, 2001

Technical Program Committee, Pacific Northwest Software Quality Conference (PNSQC) 2000, Portland, Oregon, October 2000



## **Publications**

Reviewer, *Transactions on Software Engineering and Methodology*, September 2012 – Present

Reviewer, *Empirical Software Engineering*, August 2012 – Present

Reviewer, *IEEE Transactions on Software Engineering*, September 2010 – Present

Reviewer, *Information and Software Technology*, July 2003 – Present

Reviewer, *IEEE Transactions on Information Technology in Biomedicine*, November 2003 – August 2008

Reviewer, *IEEE Transactions on Wireless Communications*, April 2002 – August 2008

Reviewer, *Pattern Languages of Program Design 4*, Neil Harrison, Brian Foote, and Hans Rohnert, Eds., Reading, MA: Addison-Wesley, 2000

Contributing Editor, *NetWare Technical Journal*, Feb 1990 – Aug 1990

## **Infrared Data Association**

Member, IrDA Architecture Council, Jan 2002 – April 2008

Member, IrOBEX Working Group, Jan 2002 – Dec 2005

Member, IrDA Financial Messaging Working Group, Feb 2001 – Dec 2005

Chair, IrDA Test and Interoperability Committee, Feb 1998 – Oct 1999

Member, IrDA Architecture Council, Feb 1998 – Oct 1999

Convenor, Digital Imaging SIG, Oct 1997 – Oct 1999

Co-Convenor, IrOBEX Interop Working Group, Feb 1998 – Oct 1998

Convenor, Test Frames Working Group, Feb 1998

Member, Interoperability Test Council, Jul 1997 – Feb 1998

## **Academic Honors**

Brigham Young University, Technology Transfer Award, 2013

Brigham Young University, Eliza R. Snow Grant, 2010

Sigma Xi, International Honor Society of Scientific & Engineering Research, Inducted May 1999

Upsilon Pi Epsilon, National Computer Science Honor Society, Inducted February 1998

President, Computer Science Graduate Student Association, Oregon State University, 1994-1995

## **Teaching Honors**

Outstanding Computer Science Instructor of the Year, National University, San Jose, California, 1988-1989

Outstanding Computer Science Course of the Year, National University, San Jose, California, 1988-1989

## **Professional Honors**

Jesup High School (Jesup, Iowa) established the Charles Knutson Mathematics Award for outstanding student mathematics achievement, 2004-2008

## **Affiliation**

Member, International Software Engineering Research Network (ISERN), 2011 – Present

Member, IEEE Communications Society Technical Committee on Computer Communications, April 2002 – August 2008

Member IEEE (Computer Society, Communications Society)

Member ACM (SIGSOFT, SIGCSE) (Past: SIGMOBILE, SIGCOMM)

## Other Professional Activities

Review Panel, National Science Foundation, 2008

Review Panel, National Science Foundation, 2004

Team Member, Submission Evaluation Team, IEEE Computer Society International Design Competition (CSIDC) 2002

## Presentations

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1. RootsTech. Salt Lake City, Utah, February 8, 2014. "Genealogy Meets Angry Birds: Making Interfaces More Addictive."
2. RootsTech. Salt Lake City, Utah, February 6, 2014. "From Pedigrees to Interactive Trees: A History of Genealogical Interfaces."
3. Brigham Young University, Marriott School of Management, Entrepreneurship Professional Seminar Series. Provo, Utah, November 15, 2013. "Managing New Products and Ventures: Software Development."
4. Universidade Federal de Pernambuco, Centro de Informatica, Colloquium. Recife, Pernambuco, Brazil, April 17, 2013. "Software Created by Humans: Software Meets Soft Science."
5. Family History Technology Workshop, RootsTech. Salt Lake City, Utah, March 21-23, 2013. "Motivational Interfaces, or, Everything I Need to Know about Family Trees I Learned from Angry Birds."
6. University of Notre Dame, Dept. of Computer Science, Colloquium. South Bend, Indiana, October 18, 2012. "Software Created by Humans: Software Meets Soft Science."
7. Brigham Young University, Marriott School of Management, Product Management Association Lecture. Provo, Utah, November, 2012. "Product Management in the Software Industry."
8. Second International Workshop on Replication in Empirical Software Engineering Research (RESER). Banff, Alberta, Canada, September, 2011. "Design Team Perception of Development Team Composition: Implications for Conway's Law."
9. Southern Virginia University, Education Conference. Buena Vista, Virginia, June 2011. "Families and the Internet."
10. BYU-Hawaii, Dept. of Computer and Information Sciences, Colloquium. Laie, Hawaii, May 19, 2011. "Software Created by Humans: The Driving Function of Software Cost."
11. Brigham Young University, Counseling Center Seminar Series. Provo, Utah, November 2010. "Online Gaming Addiction."
12. Sandia National Labs, Computer Science Research Institute Seminar. Albuquerque, New Mexico, November, 2010. "Software Created by Humans: The Driving Function of Software Cost."
13. Brigham Young University, IT Seminar. Provo, Utah, October 2010. "Internet Safety."
14. BYU Campus Education Week, Provo, Utah, August, 2010. "Welcome to Internet Parenting. Now What Do I Do?!"
15. BYU Campus Education Week, Provo, Utah, August, 2010. "Parenting Guidelines: Are We Losing Our Children On The Information Superhighway?"
16. BYU Campus Education Week, Provo, Utah, August, 2010. "Safe Online Social Networking? Positives, Dangers, and Challenges."
17. BYU Campus Education Week, Provo, Utah, August, 2010. "Cell Phone Safety: Digitally Tethered Teens and Other Modern Dilemmas."
18. BYU Campus Education Week, Provo, Utah, August, 2010. "Online Pornography: Protecting Our Children and Our Families."
19. BYU Campus Education Week, Provo, Utah, August, 2010. "Internet Predators: Who's Watching Our Children Online?"
20. BYU Campus Education Week, Provo, Utah, August, 2010. "Cyberbullying: Growing up on the Digital Playground."

21. BYU Campus Education Week, Provo, Utah, August, 2010. "Chatting and Messaging: Overly Connected in a Digital World."
22. BYU Campus Education Week, Provo, Utah, August, 2010. "Just a Game? When Virtual Reality Becomes Our Children's Reality."
23. BYU Campus Education Week, Provo, Utah, August, 2010. "Unclogging My Email: Spam, Phishing Attacks, Netiquette."
24. BYU Campus Education Week, Provo, Utah, August, 2010. "The Dark Side of Software: Viruses, Worms, Adware, Spyware."
25. BYU Campus Education Week, Provo, Utah, August, 2010. "Identity Theft: Why Would Anyone Want My Identity?"
26. Winder Tri-Stake Adult Education Conference. Winder, Utah, June 18, 2010. "Internet Parenting."
27. Winder Tri-Stake Adult Education Conference. Winder, Utah, June 18, 2010. "Digital Mists of Darkness."
28. Brigham Young University, Alumni Association Board of Directors. Provo, Utah, April 2010. "The 20-Minute Genealogist."
29. BYU Entrepreneurship Center Founders Conference. Provo, Utah, April 2010. "The 20-Minute Genealogist."
30. BYU Entrepreneurship Center Founders Conference. Provo, Utah, April 2010. "The Internet Safety Project."
31. BYU Studies 50th Anniversary Symposium. Provo, Utah, March, 2010. "The 20-Minute Genealogist: Validating a Research Metaphor."
32. Brigham Young University, President's Leadership Council. Provo, Utah, October, 2009. "The 20-Minute Genealogist."
33. BYU Campus Education Week, Provo, Utah, August, 2009. "Welcome to Internet Parenting. Now What Do I Do?!"
34. BYU Campus Education Week, Provo, Utah, August, 2009. "Parenting Guidelines: Are We Losing Our Children On The Information Superhighway?"
35. BYU Campus Education Week, Provo, Utah, August, 2009. "Safe Online Social Networking? Positives, Dangers, and Challenges."
36. BYU Campus Education Week, Provo, Utah, August, 2009. "Cell Phone Safety: Digitally Tethered Teens and Other Modern Dilemmas."
37. BYU Campus Education Week, Provo, Utah, August, 2009. "Online Pornography: Protecting Our Children and Our Families."
38. BYU Campus Education Week, Provo, Utah, August, 2009. "Internet Predators: Who's Watching Our Children Online?"
39. BYU Campus Education Week, Provo, Utah, August, 2009. "Cyberbullying: Growing up on the Digital Playground."
40. BYU Campus Education Week, Provo, Utah, August, 2009. "Chatting and Messaging: Overly Connected in a Digital World."
41. BYU Campus Education Week, Provo, Utah, August, 2009. "Just a Game? When Virtual Reality Becomes Our Children's Reality."
42. BYU Campus Education Week, Provo, Utah, August, 2009. "Unclogging My Email: Spam, Phishing Attacks, Netiquette."
43. BYU Campus Education Week, Provo, Utah, August, 2009. "The Dark Side of Software: Viruses, Worms, Adware, Spyware."
44. BYU Campus Education Week, Provo, Utah, August, 2009. "Identity Theft: Why Would Anyone Want My Identity?"
45. FamilySearch, Salt Lake City, Utah, April 29, 2009
46. Alta High School, Sandy, Utah, March 19, 2009. "Internet Safety: Teens and Technology in the Cell Phone and MySpace Generation."
47. Workshop on Technology for Family History and Genealogical Research, Provo, Utah, March 12, 2009
48. Mountainland Head Start, Provo, Utah, March 7, 2009
49. Mountainland Head Start Parent Education Conference. Provo, Utah, February 28, 2009. "Internet Safety for Families."

50. Cyber Secrets Conference, Provo, Utah, February 4, 2009
51. BYU Campus Education Week, Provo, Utah, August, 2008. "What Are Your Kids Doing on the Internet?"
52. BYU Campus Education Week, Provo, Utah, August, 2008. "Who's Watching Your Kids on the Internet?"
53. BYU Campus Education Week, Provo, Utah, August, 2008. "What Are Your Kids Finding on the Internet?"
54. BYU Campus Education Week, Provo, Utah, August, 2008. "Why Would Someone Want My Identity?"
55. BYU Campus Education Week, Provo, Utah, August, 2008. "Malicious Email."
56. BYU Campus Education Week, Provo, Utah, August, 2008. "Malicious Software."
57. BYU Campus Education Week, Provo, Utah, August, 2008. "Online Gaming."
58. BYU Campus Education Week, Provo, Utah, August, 2008. "Handheld Devices: Safety on the New Frontier."
59. IIT Technical Institute, Commencement Address, Salt Lake City, Utah, June 7, 2008
60. Communities for Decency, Technology Summit, Provo, Utah, May 31, 2008
61. BYU Campus Education Week, Provo, Utah, August, 2007. "What Are Your Kids Doing on the Internet?"
62. BYU Campus Education Week, Provo, Utah, August, 2007. "Who's Watching Your Kids on the Internet?"
63. BYU Campus Education Week, Provo, Utah, August, 2007. "What Are Your Kids Finding on the Internet?"
64. BYU Campus Education Week, Provo, Utah, August, 2007. "Why Would Someone Want My Identity?"
65. BYU Campus Education Week, Provo, Utah, August, 2007. "Malicious Email."
66. BYU Campus Education Week, Provo, Utah, August, 2007. "Malicious Software."
67. BYU Campus Education Week, Provo, Utah, August, 2007. "Online Gaming."
68. BYU Campus Education Week, Provo, Utah, August, 2007. "Handheld Devices: Safety on the New Frontier."
69. Embedded Systems Conference, San Francisco, March 10, 2005
70. Embedded Systems Conference, San Francisco, March 9, 2005
71. Embedded Systems Conference, San Francisco, March 31, 2004
72. Embedded Systems Conference, San Francisco, March 30, 2004
73. IEEE Wireless Communications and Networking Conference (WCNC), Atlanta, Georgia, March 24, 2004
74. IrDA Seminar (two day) Corvallis, January 22-23, 2003
75. International Telemetering Conference, San Diego, California, October 21-24, 2002
76. Embedded Systems Conference, San Francisco, California, March 13, 2002
77. Embedded Systems Conference, San Francisco, California, March 13, 2002
78. MobiCom 2001, Rome Italy, July 2001
79. IrDA Seminar (two day), Corvallis, Oregon, April 24-25, 2001
80. Colloquium, Brigham Young University, Marriott School of Management, Center for eBusiness, April 20, 2001
81. Embedded Systems Conference, San Francisco, California, April 13, 2001
82. Embedded Systems Conference, San Francisco, California, April 12, 2001
83. IrDA Seminar (one day), Portable Design Conference, Santa Clara, California, January 29, 2001
84. Embedded Systems Conference, San Jose, California, September 28, 2000
85. Embedded Systems Conference, San Jose, California, September 27, 2000
86. Embedded Systems Conference, San Jose, California, September 27, 2000
87. Electronic Design, Workshop on Short-Range Wireless Data, Chicago, Illinois, June 2000
88. IrDA Seminar (one day), San Francisco, California, April 2000

89. IrDA General Meeting, San Francisco, California, April, 2000
90. Colloquium, Oregon State University, Corvallis, Oregon, February 2000
91. Colloquium, Brigham Young University Computer Science Department, Provo, Utah, January 2000
92. IrDA Seminar (one day), San Francisco, California, January 2000
93. IrDA General Meeting, San Francisco, California, January 2000
94. IrDA Seminar (two day), Corvallis, Oregon, January 2000
95. IrDA Seminar, Taipei, Taiwan, May 1999
96. IrDA General Meeting, San Francisco, California, July 1999
97. IrDA General Meeting, Paris, France, April 1999
98. IrDA Seminar (two day), Corvallis, Oregon, February 1999
99. Portable by Design/Wireless Symposium, San Jose California, February 1999
100. Portable Design Conference, San Diego, California, February 1999
101. IrDA General Meeting, San Francisco, January 1999
102. Embedded Systems Conference, San Jose, California, November 1998
103. IrDA Seminar (two day), Corvallis, Oregon, November 1998
104. IrDA General Meeting, San Francisco, California, October 1998
105. IrDA Seminar (two day), Corvallis, Oregon, September 1998
106. IrDA General Meeting, New Orleans, Louisiana, July 1998
107. Wind River Developer's Conference, San Jose, California, May 1998
108. IrDA General Meeting, Osaka, Japan, April 1998
109. IrDA Seminar (two day), Moorpark, California, March 1998
110. Embedded Systems Conference East, Chicago, Illinois, March 1998
111. IrDA General Meeting, Milpitas, California, February 1998
112. Portable by Design/Wireless Symposium, Santa Clara, California, February 1998
113. IrDA Seminar (one day), AI Corporation, Tokyo, Japan, September 1997
114. IrDA Seminar (one day), ISI Japan, Tokyo, Japan, September, 1997
115. Embedded Systems Conference, San Jose, California, September 1997
116. Colloquium, Brigham Young University, Provo, Utah, November 1997
117. Society of Automotive Engineers, Detroit, Michigan, July 1997
118. Embedded Systems Conference East, Chicago, Illinois, March 1997
119. Pacific Northwest Software Quality Conference, Portland Oregon, October 1996
120. Pattern Languages of Programming Conference, Monticello, Illinois, September 1996
121. International Conference on Achieving Quality in Software, Pisa, Italy, April 1991

## Other Skills

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Fluent Italian, decent French, passable Spanish, selected dabbling in American Sign Language, Latin, and German.

Intermittent moments of excellence in golf, racquetball, basketball, frisbee, acoustic guitar, electric bass, djembe drum, drum kit, vocals, juggling.