

Ken Christensen

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BIOGRAPHICAL DATA

Born: Minneapolis, Minnesota (1960) and raised in Gainesville, Florida
Married (1986) to Loraine (Newman); three children (born 1990, 1992, and 1996)

EDUCATION

Ph.D., Electrical and Computer Engineering, North Carolina State University, 1991 (Advisor: Arne Nilsson)
M.S., Electrical Engineering, North Carolina State University, 1983
B.S. with Honors, Electrical Engineering, University of Florida, 1981

RESEARCH INTERESTS

My research interests are at the intersection of networks and energy in the area of energy-efficient computing and communications systems, and the application of communications to improving the storage, distribution, and use of energy in small grids.

APPOINTMENTS

Associate Chair of Undergraduate Affairs, January 2017 to present
Interim Department Chair, August 2016 to December 2016
Associate Department Chair, August 2015 to August 2016
Full Professor, University of South Florida, 2007 to present
Associate Professor, University of South Florida, August 2000 to August 2007
Assistant Professor, University of South Florida, 1995 to 2000
Adjunct Instructor, Campbell University, North Carolina, 1993 to 1994

SABBATICALS

- Research sabbatical, Department of Communication Systems, Lund University (Sweden), Spring 2004

INDUSTRY EXPERIENCE

- IBM Corporation, Research Triangle Park, 1983 to 1995
 - Team leader for advanced development of future Local Area Network (LAN) directions and products. Generated 12 patents, 8 technical disclosures, and numerous reports and white papers.
- IBM Resident Study at North Carolina State University for completion of Ph.D., 1989 to 1991

LICENSURE AND AFFILIATIONS

- Licensed Professional Engineer (P.E.) in the state of Florida (license number 53993)
- Senior member of Institute of Electrical and Electronics Engineers (IEEE) with society memberships in Computer Society and Communications Society
- Member of Association for Computing Machinery (ACM) with special interest group memberships in SIGCOMM (communications), SIGMETRICS (performance evaluation), SIGCSE (education), and SIGCAS (computers and society)
- Member of American Society for Engineering Education (ASEE)
- Member of Tau Beta Pi (engineering honor society), Eta Kappa Nu (electrical engineering honor society), and Upsilon Pi Epsilon (computer science honor society)

PROFESSIONAL DEVELOPMENT

- Training for ABET EAC Program Evaluator, 2021
- Training for ABET assessment methods, San Diego (2005). Tampa (2006 and 2011), and Dallas (2019)
- Continuing education for Professional Engineer (P.E.) license, 2002, 2006, 2010, 2012, 2014, 2016, 2018, and 2020.

AWARDS

- USF CSE Broadening Participation in Computing (BPC) Award, 2022
- College of Engineering Academy of Distinguished Engineering Educators (ADE2), 2018 to 2021
- USF Kosove Distinguished Undergraduate Teaching and Service Award, 2017
- USF Excellence in Innovation Award, 2009
- USF Charter Member of Academy of Inventors, 2009
- ITFlorida Award for Excellence in Sustainability through Information Technology, 2008
- USF “spotlight program” recognition as part of the ten year anniversary of the USF Collaborative for Children, Families, and Community (with D. Rundus), 2006
- Second place in Microsoft Windows Embedded Student Challenge (advisor for a team of students), 2006
- USF Outstanding Dissertation Prize (chair for H. Fujinoki), 2001
- USF Outstanding Master’s Thesis Prize (chair for A. Solleti), 2001
- ASEE/NASA Summer Faculty Fellowship at NASA-KSC, 1998 and 1999
- USF Teaching Incentive Program Award, 1998
- USF Outstanding Undergraduate Teaching Award, 1997

GRANTS

1. Expanding the pipeline of the Cyber/IT workforce in the Tampa Bay area, CyberFlorida, Florida Department of Education/Florida Center for Cybersecurity, 2022 to 2023, \$1,390,000 (S. Chellappan, K. Christensen, M. Pazos-Revilla, B. Batson, and S. Sarkar).
2. Collaborative Research: Florida Information Technology Graduation Attainment Pathways (Flit-GAP), National Science Foundation, 2021 to 2026, \$1,421,774 (USF PI: K. Christensen, USF co-PI: R. Perez, joint with FIU (lead) and UCF for a total of \$4,999,902).
3. Project for Center for Inclusive Computing, Northeastern University, 2020 to 2023, \$579,737 (PI: S. Sarkar, Co-PIs: J. Wang and K. Christensen).
4. Collaborative Research: Florida IT Pathways to Success (Flit-Path), National Science Foundation, 2016 to 2022, \$1,527,307 (USF PI: K. Christensen, USF co-PI: R. Perez, joint with FIU (lead) and UCF for a total of \$4,998,732).
5. Using Discrete Event Simulation to Improve School Mental Health Services, Spencer Foundation, 2021 to 2022, \$50,000 (PI: N. von der Embse, Co-PI: K. Christensen).
6. Serverless HPC: Comparison of GCP to local HPC cluster for a range of workloads, Google GCP Research Credits Program, 2019, \$5,000 of GCP credit (sole PI).
7. CSIT (UCF-USF-FIU) TEAm: An Urban University Coalition Response to Florida’s Computer and Information Technology Workforce Needs, Board of Governors Commission on Higher Education Access and Degree Attainment, 2013-2018, \$1,425,309 (USF PI: R. Perez, Co-PI: K. Christensen joint with UCF (lead) and FIU for a total of \$4,858,413).
8. CC*DNI Networking Infrastructure: Campus Research Network – High Bandwidth Private Network Path for Research Data from Experiment to Analysis and Back Again at USF, National Science Foundation, 2016 to 2017, \$495,645 (PI: T. Fawcett. Co-PI: A. Eddins, J. Walton, J. Krischer, and K. Christensen).
9. Reducing Electricity Consumption at USF by Using State-of-the-Art Methods to Power Manage Desktop Computers, *USF Student Green Energy Fund Council*, 2012 to 2013, \$50,000 (co-PI: M. Mostowfi and C. Woolley).
10. New Protocol Semantics and Scheduling Primitives for Energy Efficiency: Burst Coalescing at the Link and Application Layers, *Google*, 2012, \$10,000 (co-PI: P. Reviriego, Universidad Antonio de Nebrija)
11. A Study on Energy Efficiency for Network Device, *Korea Electronics Technology Institute (KETI)*, 2010 to 2012, \$100,000 (sole PI).

12. Reducing the Energy Consumption of IT: A Focus on Data Centers and End User Devices, *USF FESC Seed Grant Initiative*, 2010 to 2011, \$50,000 (co-Pi: Y. Tu).
13. Green Networking: Reducing the Energy Use of LAN Switches and Connected Hosts, *Cisco Research Center*, 2008 to 2009, \$39,000 (sole PI).
14. Using Laptops to Improve Teaching Effectiveness and Reduce Cost and Dependence on Fixed-Resource PC Labs, *USF Innovative Teaching Grants Program*, 2008 to 2009, \$10,000 plus \$10,000 match from College. (co-PI: R. Turner).
15. NeTS-FIND: Collaborative Research: Architectural Support for Selectively-Connected End Systems: Enabling an Energy-Efficient Future Internet, *National Science Foundation*, 2007 to 2008, \$20,013 (collaborator M. Allman, International Computer Science Institute).
16. REU Supplement to CNS-0520081, *National Science Foundation*, 2007 to 2008, \$12,000 (sole PI).
17. REU Supplement to CNS-0520081, *National Science Foundation*, 2006 to 2007, \$6,000 (sole PI).
18. CSE Volunteers: Support for Service Learning, *USF Collaborative for Children, Families and Communities 2006-2007 Faculty Grant Program*, 2006 to 2007, \$5,000 (co-PI: D. Rundus).
19. Use of Clickers Versus Web for Evaluation of Classroom Learning, *Innovative Teaching Grant Program USF Center for 21st Century Teaching Excellence*, 2006 to 2007, \$4,000 (co-PI: E. Kellner and D. Rundus).
20. CSE Volunteers: Support for Service Learning, *USF Collaborative for Children, Families and Communities 2005-2006 Service-Learning Grant Program*, 2005 to 2006, \$2,000 (co-PI: D. Rundus).
21. Collaborative Research (NeTS-NBD): Increasing the Energy Efficiency of the Internet with a Focus on Edge Devices, *National Science Foundation*, 2005 to 2008, \$200,000 plus \$15,000 match from Department and College (collaborator: A. George, University of Florida).
22. An Investigation of Immersive Virtual Reality for Training Nursing Students to Treat Patients in Critical Care Environments, *USF College of Nursing and College of Engineering Collaborative Grant Program*, 2005 to 2006, \$15,000 (co-PI: L. Gonzalez, College of Nursing).
23. Student Travel Support for 29th IEEE Local Computer Networks Conference (LCN), *National Science Foundation*, 2004, \$10,300 (sole PI).
24. RET Supplement to ANI-9875177, *National Science Foundation*, 2002, \$10,000 (sole PI).
25. REU Supplement to ANI-9875177, *National Science Foundation*, 2002, \$5,500 (sole PI).
26. Advances in Networked Video to Improve Safety, Effectiveness, and Security of Florida Spaceport Operations, *Florida Space Research and Education Grant Program*, 2001, \$30,000 (sole PI).
27. International Travel Grant Support, *USF Division of Sponsored Research*, 2001, \$1,500 (sole PI).
28. REU Supplement to ANI-9875177, *National Science Foundation*, 2000, \$5,000 (sole PI).
29. CAREER: Performance Evaluation of Gigabit Ethernet Networks, A Systems and Experimental Approach, *National Science Foundation*, 1998 to 2002, \$276,964 plus \$10,000 match from Department and College (sole PI).
30. Digital and Computer Video Interdisciplinary Center, *USF Interdisciplinary Research Center Grant Program*, 1999, \$80,000, (one of fifteen total faculty founding members, V. Jain primary).
31. Integrated Domain Engineering for Applications, *Honeywell Space Systems Group*, Largo, Florida, 1998, \$25,000 (M. Varanasi primary).
32. Course Enhancement: Student Web Publishing as a Means of Professional Communications for Enhanced Student and Faculty Interaction, *USF Instructional Development Grants Program*, 1998, \$6,300 (co-PI: R. Perez and A. Callahan).
33. A Technology-Supported “Boot Camp” for Computer Tools for Engineers (EGN 2210), *USF Instructional Development Grants Program*, 1998 to 1999, \$7,500 (co-PI: D. Rundus).
34. Performance Prediction for Large Computer Networks, the Next Step, *USF Research and Creative Scholarship Grants Program*, 1996 to 1997, \$7,500 (sole PI).

PROFESSIONAL SERVICE

Organizational activities and service

- Founding member and current President of *The Pledge of the Computing Professional*. Founded in 2011 with 15 member institutions, current membership of 63 institutions.

Editorial

Editor-in-chief: *International Journal of Network Management* (Wiley), 2008 to 2011
 Advisory board: *International Journal of Network Management* (Wiley), 2012 to present
 Associate editor: *IEEE IT Professional*, 2005 to 2006, and *International Journal of Network Management* (Wiley), 2005 to 2008
 Editorial boards: *International Journal of Network Management* (Wiley), 1996 to 2005, *Computer Communications* (Elsevier), 2000 to 2008, *IEEE IT Professional*, 2006 to 2010, and *Telecommunication Systems* (Springer), 2009 to 2011.

Guest editorships

1. Special issue on Green Communications for *Computer Networks* (with P. Serrano, X. Costa-Pérez, and J. Wu), Vol. 78, February 2015.
2. Special issue on Energy-Efficient Networks for *IEEE Network* (with J. Quittek, NEC and B. Nordman, LBNL), Vol. 25, No. 2, March-April 2011.
3. Special issue on Data Center Design for *IEEE IT Professional* (with W. Chu, Cisco Systems and J.-M. Chang, Iowa State University), Vol. 11, No. 4, July-August 2009.
4. Special issue on Managing Networks and Systems Tools and Strategies, *IEEE IT Professional* (with S. Wu, Boeing Corporation), Vol. 8, No. 6, November-December 2006.
5. Special Issue on Performance Evaluation of IP Networks and Services, *Computer Communications* (with F. Huebner, AT&T), Vol. 26, No. 8, May 2003.
6. Special Issue on Issues and Trends in Terabit Switching, *Computer Communications* (with M. Waldvogel, IBM Zurich), Vol. 25, No. 6, April 2002.

Journal and letters reviewing

- *Computer Communications, Communications of the ACM, ETRI Journal, IBM Journal of Research and Development, IET Electronics Letters, IEEE Journal on Selected Areas in Communication, IEEE Transactions on Communications, IEEE Transactions on Computers, IEEE Transactions on Industrial Informatics, IEEE/ACM Transactions on Networking, IEEE Transactions on Parallel and Distributed Systems, ACM Transactions on Intelligent Systems and Technology, Computer Networks, Performance Evaluation, International Journal of Network Management, IEEE Communications Magazine, IEEE IT Professional Magazine, IEEE Transactions on Circuits and Systems II, Journal of Information Science and Engineering, Journal of Power Technologies, Applied Mathematics & Information Sciences, Peer-to-Peer Networking and Applications, Wireless Networks, IEEE Communications Letters, and others.*

Conference and workshop chairing

General chair: *IEEE Conference on Local Computer Networks (LCN)* 2007 (Dublin, Ireland).
 Program chair: *IEEE LCN* 1999 (Boston), 2000 (Tampa), and 2006 (Tampa), and *IEEE High Speed Local Networks Workshop (HSLN)* 2002 (Tampa) and 2003 (Bonn, Germany), *e-Energy* 2012 (one of three co-chairs, Madrid, Spain), *SustainIT* 2012 (one of three co-chairs, Pisa, Italy), *IEEE GreenCom* 2013 (one of three co-chairs, Beijing, China).
 Corporate chair: *IEEE LCN* 2010 (Denver).
 Local chair: *IEEE LCN* 2000 (Tampa), 2001 (Tampa), 2002 (Tampa), 2004 (Tampa), 2006 (Tampa), 2012 (Clearwater Beach), and 2015 (Clearwater Beach)

Conference and workshop organizing committees

IEEE LCN 2008 to 2022 and *IEEE GreenComm* 2009 to 2011 (in conjunction with *IEEE ICC* and *IEEE GLOBECOM*).

Conference and workshop program committees

SMARTGREENS 2018 to 2022, *IEEE GreenCom* 2014 and 2015, *IEEE CoCoNet* 2015, *IEEE SustainCom* 2014, *IEEE FIE* 2014, *IEEE/ACM GreenCom* 2012, *Energy in Communication, Information, and Cyber-Physical Systems*

(E6) – COMSNET workshop 2011, e-Energy 2010 to 2011, Energy 2011, IEEE Symposium on Ad hoc and Sensor Networks (AHSN) 2008 to 2010, IEEE IPCCC 2001 to 2004, IEEE MASCOTS 2008 to 2009, IEEE SAINT 2002, IEEE End-to-End Service Differentiation Workshop 2002, SPIE International Symposium on Voice, Video, and Data Communications 2000, SPIE ITCOM 2003 to 2004, and IEEE Southeastcon 1996.

Conference and workshop reviewing (and not on program committee)

IEEE AHSN, IEEE GLOBECOM, IEEE ICC, IEEE INFOCOM, IEEE High-Speed Local Networks Workshop, IEEE Workshop on End-to-End Service Differentiation, IEEE Online Conference on Green Computing, IEEE International Conference on Smart Grid Communications, IEEE/ASEE Frontiers in Education, ASEE Southeastern Section Conference, and others.

Other professional service

- ABET EAC Program Evaluator, 2021 to present
- Member of ACM Committee on Professional Ethics (COPE), 2019 to present
- External reviewer for a Ph.D. dissertation, University of Ghana, 2021 to 2022
- Reviewer and panelist for National Science Foundation (NSF), 2000, 2001, 2002, 2003, and 2017
- External reviewer for research proposals for Korea Institute of Energy Technology Evaluation and Planning, 2014
- External reviewer for a Ph.D. dissertation, National Institute of Technology Calicut, 2013
- External reviewer and member of jury for a Ph.D. defense at Télécom ParisTech, 2012
- Judge for IEEEExtreme 5.0 Global Programming Competition, 2011
- External reviewer and member of jury for a Ph.D. defense at École Normale Supérieure de Lyon, 2011
- External reviewer for Austrian Science Fund (FWF), 2009 and 2011
- External reviewer for research proposals for Nebraska Center for Energy Sciences Research, 2009
- Panelist for IEEE Admission and Advancement Panel, 2000 and 2009
- External reviewer for tenure application at Information and Communications University (Korea), 2009
- External reviewer for Netherlands Organisation for Scientific Research (NWO), 2009
- External reviewer for Netherlands Technology Foundation STW, 2009
- External reviewer for tenure applications at Purdue, Penn State Great Valley, University of North Texas, and Clemson University, 2008 and 2009
- External reviewer for South Africa National Research Foundation (NRF), 2006
- External examiner for a Ph.D. candidate, Nanyang Technological University, 2002

UNIVERSITY SERVICE

Leadership (not committee)

- Associate Chair of Undergraduate Affairs, 2017 to present
- CSIT TEAm grant project lead for USF, August 2016 to 2018
- Interim Chair for Department of Computer Science and Engineering, August 2016 to December 2016
- Associate Chair for Department of Computer Science and Engineering, 2015 to 2016
- Director of Undergraduate Program for Department of Computer Science and Engineering, 2007 to 2016
- Coordinator of College Bulls Engineering Success Training (BEST) program, 2013 to present
- Coordinator of College Mini-Circuit Design-for-X (DFX) Lab, 2014 to present
- Coordinator of Department Computing Partners Program, 2018 to present

Committees and councils

- University Faculty Senate, 2016 to present
- Faculty Council on Student Admissions, 2018 to present
- Member of STEM Teaching Evaluation Committee, 2019 to 2020
- Student Assessment of Instruction Workgroup (committee of Faculty Senate), 2018 to 2019
- University Faculty Information System (FIS) review representative for the College, 2017 to 2018
- University National Awards Resource Faculty Group, 2009 to 2013

- University Assessment Steering Committee, 2006 to 2014
- University Undergraduate Council, 2008 to 2011
- University Graduate Council, 2004 to 2007
- University Academic Computing Committee, 2002 to 2004
- University International Admissions Advisory Committee, 2000 to 2003
- University Internet2 Technical Committee, 2000 to 2001 (co-chair)
- College search committee for position of Director of Student Services, 2011
- College Faculty Advisory Committee for DFX Lab, 2014 to present (chair)
- College Curriculum Committee, 2008 to present
- College Computing Committee, 2008 to present
- College ABET Committee, 2007 to present
- College representative on Career Services hiring committee for an Engineering Career Counselor, 2015
- Department search committee for Tenure-Track Faculty 2000 to 2005, 2006 to 2007 (chair), and 2011 to 2014 (chair), 2015, 2021 (co-chair), 2022 (co-chair)
- Department search committee for Instructional Faculty 2017, 2018 (chair), 2022 (chair)
- Department search committee for Professor of Practice 2022 (chair)
- Department search committee for position of Success Coach 2022 (chair)
- Department search committee for position of Technical Support Specialist, 2011 and 2014
- Department search committee for position of Administrative Services Administrator, 2015 (chair)
- Department search committee for position of Academic Program Specialist, 2015 and 2019
- Department undergraduate affairs and ABET committee, 2005 to present, 2007 to present (chair)
- Department promotion and tenure committee, 2001 to 2006, 2007 (chair), 2008 to present
- Department equipment and infrastructure committee, 1995 to 1996, 2011 to 2018
- Department ABET coordinator, 2005 to present (chair)
- Department SACS assessment coordinator, 2008 to 2021
- Department Broadening Participation in Computing (BPC) committee, 2018 to 2021
- Department course scheduling committee, 2019 to present
- Department faculty evaluation committee, 2009, 2010 (chair), 2011 (chair), 2017, 2018, and 2021
- Department graduate examinations committee, 2005 and 2006 (chair)
- Department graduate committee, fall 2005 (chair), 2006 to 2008
- Department 25 Year anniversary celebration committee, 2005 (chair)
- Department planning and external relations committee, 2003 to 2005
- Department graduate admissions committee, 2000 to 2002
- Department ABET/CSAB preparation committee, 2000 to 2001
- Department minority recruiting committee, 1995 to 1996

Other university service

- Reviewer for USF Division of Sponsored Research internal grant program, 2005 to 2007, and 2010
- Coordinator for undergraduate activities at College of Engineering Research Day, 2009 and 2010
- Reviewer for USF Graduate School outstanding dissertation and thesis awards, 2006 and 2007

COMMUNITY SERVICE

- Judge for Florida State Science Fair, 1998 to 2002, 2006 to 2015
- Reviewer for National Academy of Inventors USF Young Innovator Competition, 2010 and 2011
- Committee member for State of Florida K-12 Computer Science teacher certification, 2006 and 2009
- Judge for Florida-Georgia Louis Stokes Alliance for Minority Participation Expo, 2003
- Volunteer for “Yes, We Care” program, 1995 to 1999
- Judge for Pinellas County and Hillsborough County Science Fairs, 1997
- Judge for Florida High School Programming Contest, 1996
- Advisor for Raleigh, North Carolina Junior Achievement, 1985 and 1986

INTERNATIONAL OUTREACH

- Hosted international visitors in the Department of Computer Science and Engineering
 - Dr. Lillykutty Jacob, National Institute of Technology Calicut (India), 2012.
 - Ms. Anne-Cécile Orgerie, INRIA RESO / Laboratoire de l’Informatique du Parallélisme, Ecole Normale Supérieure de Lyon (France), 2010.
 - Mr. Alessandro Parisi, Dipartimento di Ingegneria Elettronica e dell’Informazione (DIEI), University of Perugia (Italy), 2009 to 2010.
 - Dr. Paul Werstein, Department of Computer Science, University of Otago (New Zealand), 2007.
 - Dr. Yutaka Ishibashi, Department of Electrical and Computer Engineering, Nagoya Institute of Technology (Japan), 2000.
- Initiated and coordinated exchange agreement between USF and Jönköping University (Sweden), 2006
- Visited Fulbright offices in Sweden, Denmark, and Finland on behalf of USF International Affairs, 2004
- Faculty coordinator for IEEE Computer Society student ezine, *Looking.Forward*, 2002 to 2006
 - Coordinated seven issues (of which three were bilingual) of *Looking.Forward* from IEEE Computer Society student groups at New Mexico Tech, University of Louisiana at Lafayette, Eastern Mediterranean University (Turkey), École Polytechnique de Montréal (Canada), Norwich University, Universidad Distrial Francisco José de Caldas (Colombia), CENIDET (Mexico), and University of Tehran (Iran).

STUDENT SUPERVISION

Ph.D. major professor

Current:

- Molud Esmali

Finished:

1. S. Malla, “Towards Safe Power Oversubscription and Energy Efficiency of Data Centers,” 2020.
 - Research Scientist at Facebook
2. M. Mostowfi, “Packet Coalescing and Server Substitution for Energy-Proportional Operation of Network Links and Data Servers,” 2013.
 - Past: Associate Professor at University of Northern Colorado, Current: Software developer
3. M. Jimeno, “Saving Energy in Network Hosts With an Application Layer Proxy: Design and Evaluation of New Methods that Utilize Improved Bloom Filters,” 2010.
 - Associate Professor at Universidad del Norte, Barranquilla, Colombia
4. G. Perera, “Design and Evaluation of New Search Paradigms and Power Management for Peer-to-Peer File Sharing,” 2007.
 - Associate Professor at Northeastern Illinois University Chicago
5. C. Gunaratne, “Design and Evaluation of New Power Management Methods to Reduce Direct and Induced Energy Use of the Internet,” 2007.
 - Senior Software Developer, Location Labs, Emeryville, California
6. K. Yoshigoe, “Design and Evaluation of the Combined Input and Crossbar Queued (CICQ) Switch,” 2004.
 - Professor at Embry Riddle Aeronautical University
7. Z. Prodanoff, “Performance Evaluation of URL Routing for Content Distribution Networks,” 2003.
 - Professor at University of North Florida
8. H. Fujinoki, “Performance Evaluation of Multicast Routing Algorithms to Trade-off Path Length and Bandwidth Consumption and of a Protocol to Reduce Messaging Overhead,” 2000.
 - Professor at Southeastern Illinois University Edwardsville

Ph.D. committees

Current:

- None

Finished:

1. A. Windmon, “Detecting Symptoms of Chronic Obstructive Pulmonary Disease and Congestive Heart Failure via Cough and Wheezing Sounds Using Smart-Phones and Machine Learning ,” 2020 (chair S. Chellappan)
2. P. Bahzadnia, “Dynamic Energy-Aware Database Storage and Operations,” 2018 (chair Y. Tu).
3. J. Blackburn “An Analysis of (Bad) Behavior in Online Video Games,” 2014 (chair A. Iamnitchi).
4. A. Sahin, “Towards Interference-Immune and Channel-Aware Multicarrier Schemes: Filters, Lattices, and Interference Issues,” 2013 (chair H. Arslan).
5. M. Erturk, “Tiered Networks: Modeling, Resource and Interference Management,” 2012 (chair H. Arslan)
6. A. Perez, “An Architecture for Global Ubiquitous Sensing,” 2011 (chair M. Labrador).
7. P. Wightman, “Topology Control in Wireless Sensor Networks,” 2010 (chair M. Labrador).
8. D. Molinares, “A Data Link Layer in Support of Swarming of Autonomous Underwater Vehicles,” 2009 (chair M. Labrador).
9. H. Mahmoud, “Advanced Transceiver Algorithms for OFDM(A) Systems,” 2009 (chair H. Arslan).
10. C. Guerrero, “End-to-End Available Bandwidth Estimation and Monitoring,” 2009 (chair M. Labrador).
11. M. Rana, “Unit Testing Database Applications Using SpecDB: A Database of Software Specifications,” 2006 (chair A. Kandel).
12. A. Shenker, “Graph-Theoretic Techniques for Web Content Mining,” 2003 (chair A. Kandel).
13. S. Dick, “Computational Intelligence in Software Quality Assurance,” 2002 (chair A. Kandel).
14. R. Chandramouli, “Sequential Signal Detection under Dependence,” 1999 (chair N. Ranganathan).
15. R. King, “A Modular Design for Large Broadband ATM Switching Fabric,” 1997 (chair M. Varanasi).

M.S. major professor**Current:**

- None

Finished:

1. D. January, “ Managing Off-Grid Power Use for Solar Fueled Residences with Smart Appliances, Prices-to-Devices and IoT,” 2020
2. S. Srikanth, “A Communication Protocol for Nanogrids and its Application in Off-Grid Rural Areas of Developing Countries,” 2016.
3. N. Samteladze, “Delta Encoding Based Methods to Reduce the Size of Smartphone Application Updates,” 2013.
4. M. Mostowfi, “Improving the Energy Efficiency of IEEE 802.3az EEE and Periodically Paused Switched Ethernet,” 2010.
5. J. Blackburn, “Design and Evaluation of a Green BitTorrent for Energy-Efficient Content Distribution,” 2010.
6. S. Sakamuri, “Design and Evaluation of a New Authentication Mechanism for Validating the Sender of an Email,” 2005.
7. J. Shahbazian, “Characterization and Generation of Streaming Video Traces,” 2003.
8. V. Chandramohan, “Design and Performance Evaluation of a New Spatial Reuse FireWire Protocol,” 2003.
9. J. Rogers, “Network Traffic Characterization through Bottleneck Queueing Simulations of Flow and Packet Traces,” 2002 (with S. Katkooi).
10. V. Elliot, “Forcing Explicit BGP Withdrawals to Reduce Route Oscillation in the Internet,” 2001.
11. S. Vaidya, “Performance Evaluation of a Single System Image Server Cluster using Duplicated MAC and IP Addresses,” 2001.
12. A. Shaikh, “Traffic Characterization of TCP/IP Build Data Transfers on a Gigabit Ethernet,” 2001.
13. K. Suryanarayanan, “Performance Evaluation of New methods for Load Balancing of Distributed Apache Web Servers,” 2000.
14. A. Solleti, “Efficient Transmission of Stored Video for Improved Management of Network Bandwidth,” 2000.
15. A. Mishra, “The RELOAD System for Improved Job Scheduling on a Network of Workstations,” 1999.

16. C. Padhye, “Adaptive FEC Based Loss Control Algorithm for Voice Over IP Applications,” 1999 (with W. Moreno).
17. J. Pinto, “A New Algorithm for Voice Playout Based on Adaptive Adjustment of Gaps,” 1998.
18. Y. Lu, “Synchronization of Real-Time MPEG Video Communication over Ethernet Using a Selective Discard Scheme,” 1998.
19. J. Drobisz, “Adaptive Sampling Methods for High Speed Networks to Determine Traffic Statistics including the Hurst Parameter,” 1998.
20. S. Pinninti, “Network System Management Tool” (Project), 1998.
21. A. Chellamuthu, “Efficient Computation of Cyclic Redundancy Code” (Project), 1998.
22. V. Ballingam, “Reduction of Self-Similarity by Application-Level Traffic Shaping” (Project), 1997.
23. S. Batchu, “Synthetic Workload Generator for an Ethernet Local Area Network” (Project), 1996.
24. R. Rauscher, “Improving the Delivery of Time-Constrained Audio/Video Traffic over Ethernet,” 1996.
25. N. Javagal, “Performance Evaluation of Current and Future World Wide Web Protocols,” 1996.

M.S. external supervisor

- J. Klamra and M. Olsson, “Design and Evaluation of Power Management Support for UPnP Devices,” Master’s Thesis, Lund University (Sweden), 2005 (examiner C. Nyberg, Lund University).

M.S. committees

Current:

- None

Finished:

1. J. Kuhn, “Grouper: A Packet Classification Algorithm Allowing Time-Space Tradeoffs,” 2011 (chair J. Ligatti).
2. Z. Xu, “Exploring Power/Performance Tradeoffs in Database Management Systems,” 2009 (chair Y. Tu).
3. S. Doraimani, “Filecules: A New Granularity for Resource Management in GRIDS,” 2007 (chair A. Iamnitchi).
4. L. Voicu, “Modeling the Throughput Performance of the SF-SACK Protocol,” 2006 (chair M. Labrador).
5. G. Lukachan, “Scalable Energy Efficient Location Aided Routing (SELAR) Protocol for Wireless Sensor Networks,” 2005 (chair M. Labrador).
6. S. Babu, “A Measurement Based Admission Control Mechanism for Wireless Local Area Networks,” 2005 (chair M. Labrador).
7. B. Pavlick, “A Fuzzy Logic Based Controller to Provide End-to-End Congestion Control for Streaming Media Applications,” 2005 (chair M. Labrador).
8. S. Bassi, “A Web100-Dummysnet Testbed for Education and Research in Transport Layer Protocols,” 2005 (chair M. Labrador).
9. Y. Easwaran, “Evaluation of Available Bandwidth Estimation Techniques (ABETs) and their Application in Improving TCP Performance,” 2005 (chair M. Labrador).
10. H. Gilani, “Automatically Determine Route and Mode of Transport Using a GPS Enabled Phone,” 2005 (chair R. Perez).
11. P. Saraph, “Test Case Reduction and Generation By Automated Input-Output Analysis Using Artificial Neural Networks,” 2004 (chair A. Kandel).
12. P. Ikkurthy, “Software Testing Testbed for MPEG-4 Video Traffic Over IEEE 802.11B Wireless LANs,” 2003 (chair M. Labrador).
13. S. Vangala, “Performance of TCP Over Wireless Networks,” 2003 (chair M. Labrador).
14. K. Smith, “Locating Partial Discharge Phenomena in a Power System Using Neural Networks,” 2001 (chair R. Perez).
15. M. Vanmali, “Using a Neural Network in the Software Testing Process,” 2001 (chair A. Kandel).
16. C. Wei, “The Integration of CORBA with OODBMS in Distributed Computing Environment,” 2000 (chair D. Rundus).
17. S. Dick, “Linguistic Techniques in Soft Computing,” 1999 (chair A. Kandel).

18. A. Shenker, “The Development of a Fuzzy Object-Oriented Database Application With an Integrated Verification-Based Data Mining Method,” 1999 (chair A. Kandel).
19. R. Dalal, “Orthogonal Wavelet Division Multiplexing (OWDM) for Broadband Wireless Communication,” 1999 (Chair V. Jain, Electrical Engineering).
20. Z. Ding, “Observability and Controllability of Fuzzy Dynamic System,” 1998 (chair A. Kandel).
21. A. Koneru, “A Web Based Learning Tool for Fortran” (Project), 1998 (chair D. Rundus).
22. L. Haddad, “A Decoder for the Nordstrom-Robinson (16, 8) Code” (Project), 1998 (chair M. Varansi).
23. S. Narasimhacharya, “USF Schedule Wizard,” (Project) 1998 (chair D. Rundus).
24. Z. Ji, “Performance of a Partition-Based Algorithm for Valid-Time Equijoin,” 1997 (chair M. Soo).
25. D. Gonzalez de Montemayor, “Improvement on Two-Terminal Lower Bounds,” 1997 (chair H. Strayer).
26. M. Nusekabel, “Switched Network Partitioning Using Tabu Search,” 1997 (chair H. Strayer).
27. N. Marchallick, “Improving Simulation Technology through Reinforcement Learning,” 1997 (chair S. Mahadevan).
28. K. Ma, “Congestion Controls for ABR Services in ATM Networks,” 1996 (chair R. Sankar, Electrical Engineering).
29. S. Ramadoss, “Adaptive Quantization and Fast Error Resilient Entropy Coding for Using JPEG in Wireless Communication,” 1996 (chair N. Ranganathan).

Undergraduate honors students

1. J. Sanchez, “Reduced Battery Consumption through a New Texting App for Smartphones with AMOLED Display Type,” *USF Honors Thesis*, 2016.
2. K. Tran, “Quantifying Expected Energy Savings from Power Managing USF Tampa Campus PCs,” *USF Honors Thesis*, 2013.
3. J. Lutz, “A Simulation Evaluation of Dual-Sleep Mode Energy Efficient Ethernet,” *USF Honors Thesis*, 2013.
4. D. Merker, “Green Layer of Autonomous Server Support (GLASS): Using Redirection in a Router to Enable a Residential Web Server to Sleep,” *USF Honors Thesis*, 2009.
5. W. Klerk, “Using a Simple Feedback Controller to Modulate Difficulty in Video Games,” *USF Honors Thesis*, 2006.
6. A. Hopkins, “REMOTE++: A Tool for Automatic Remote Distribution of Programs on Windows Computers,” *USF Honors Thesis*, 2003.
7. D. Svanstedt, “New Methods for Evaluating One-Way Delay in Computer Networks,” *USF Honors Thesis*, 2002.
8. C. Bexley, “An Evaluation and Demonstration of COTS Components to Implement Wearable Video Cameras on Spaceport Technicians,” *USF Honors Thesis*, 2002.
9. J. Shahbazian, “Design and Evaluation of a Computer Communication System that Uses a Novel Distributed Member Directory,” *USF Honors Thesis*, 2001.
10. Z. Reynolds, “UDP versus TCP for Use in Bulk Data Transfer Applications,” *USF Honors Thesis*, 2001.
11. J. Ferraz, “An Enhanced Simple Network Management Protocol Application for Network Engineering,” *USF Honors Thesis*, 2000.
12. A. Occipinti, “Player’s Option Character Generator (POCG): An Advanced Dungeons and Dragons Character Generator Using a Whirlwind Design Methodology,” *USF Honors Thesis*, 1998.

Supervision of research undergraduate students

1. Research Experience for Undergraduates, Department of Computer Science and Engineering, supervision of B. AlBassam, R. Niznik, and K. Tran, 2012 to 2013.
2. Research Experience for Undergraduates, Department of Computer Science and Engineering, supervision of J. Lutz, 2012.
3. Research Experience for Undergraduates, Department of Computer Science and Engineering Summer REU program, supervision of R. Viere (from University of Puerto Rico, Arecibo), summer 2011.
4. Research Experience for Undergraduates, Department of Computer Science and Engineering, supervision of M. Olson, 2011.

5. Research Experience for Undergraduates, Department of Computer Science and Engineering Summer REU program, supervision of S. Miranda (from University of Turabo of Puerto Rico), summer 2010.
6. Research Experience for Undergraduates, Department of Computer Science and Engineering Summer REU program, supervision of V. Alvarez (from Polytechnic University of Puerto Rico), summer 2008.
7. Research Experience for Undergraduates, Department of Computer Science and Engineering, supervision of J. Blackburn and R. Alnaser, 2007 to 2008.
8. Research Experience for Undergraduates, Department of Computer Science and Engineering Summer REU program, supervision of A. Vigo (from University of Puerto Rico, Mayagüez), summer 2007.
9. Research Experience for Undergraduates, Department of Computer Science and Engineering, supervision of M. Landau, 2006 to 2007.
10. Research Experience for Undergraduates, Department of Computer Science and Engineering Summer REU program, supervision of G. Quiles (from University of Puerto Rico, Mayagüez), summer 2006.
11. Research Experience for Undergraduates, Department of Computer Science and Engineering Summer REU program, supervision of C. Aviles and E. Torres (from University of Puerto Rico, Mayagüez), summer 2005.

Supervision of K-12 teachers (summer research)

1. Research Experience for Teachers, College of Engineering, supervision of T. Shaw (from Terrace Community Middle School, Tampa), summer 2002.
2. Research Experience for Teachers, College of Engineering, supervision of K. Bennett (from Terrace Community Middle School, Tampa), summer 2001.

TEACHING

Courses taught

Course name and number	Credits	Semester and year taught
<i>Computer Tools for Engineers</i> (EGN 2210)	3	Su97, F97, F98, and F99
<i>Foundations of Engineering</i> (EGN 3000)	1	F03
<i>Logic Design</i> (CDA 3201)	3	F96 and F01
<i>Computer Networks</i> (CNT 4004)	3	S96, F96, S97, S00, F02, S06, F08, F09, F10, F13, F15, F17, and F18
<i>CSE Volunteers</i> (CIS 4900)	1	F04, S05, F05, S06, F06, S07, F07, S08, F08, and S09
<i>Senior Project</i> (CIS 4910)	3	S96, F99, F01, S02, F02, S03, F03, F04, S05, F05, S06, F06, S07, F07, S08, F08, S09, F09, S10, F10, S11, F11, S12, F12, S13, F13, S14, F14, S15, F15, S16, F16, S17, F17, S18, S19, F19, S20, F20, S21, F21, S22, F22, and S23
<i>Systems Simulation</i> (CAP 4800)	3	S96, S98, S99, S05, Su09, Su11, and Su13
<i>Capacity Planning</i> (CIS 4930)	3	S01 and F01
<i>Computer Networks Essentials</i> (CNT 5008)	1	S23 and Su23
<i>Computer Networks</i> (CNT 6215)	3	F95, F96, F97, S99, S00, F00, F03, F11, F12, and F14
<i>Advanced Networks</i> (CIS 6930)	3	S98, S03, and F04
<i>Introduction to “C” Programming</i> (CSC 375)	3	S94 (Campbell University)
<i>Discrete Mathematics</i> (CSC 340)	3	F93 (Campbell University)

Teaching innovations and courses developed

- Developed the College-wide industry-based capstone design experience named Bulls Engineering Success Training (BEST). BEST projects are \$25K research grant to the College.
 - One BEST project (Fanatics) in AY2021-2022
 - Two BEST projects (Verizon) in 2017 and CAE in AY2017-2018.
 - One BEST projects (Leapdoctor) in AY2016-2017.

- Three BEST projects (CAE and Leapdoctor (2)) in AY2015-2016.
- Seven BEST projects (Harris, CAE, Syniverse, Raymond James, Hillsborough County Public Utilities (2), and TECO) in AY2014-2015.
- Four BEST projects (Harris, CAE, OSCOR, one unnamed) in AY2013-2014.
- Coordinated the development of the MiniCircuit Design-for-X (DFX) Lab in ENB 110. The DFX Lab is a College-wide resource for undergraduate students to complete design projects using 3D printers, Laser Cutter, and other equipment purchased with a MiniCircuits \$250K donation (donation secured by Tom Weller in EE).
- Developed (with D. Rundus) the *CSE Volunteers* service learning program in 2004. This program coordinated groups of students (about 15 to 20 per semester) to serve four hours per week in Hillsborough County K-12 schools to provide technology assistance. Students earn one hour of independent study credit.
- Developed five new courses *Computer Networks* (EEL 4781 and CIS 6930), *Simulation* (CIS 4930), *Advanced Networks* (CIS 6930), and *Capacity Planning* (CIS 4930) in 1995, 1996, 1998, and 2001.
- Re-designed the existing course *Senior Project* (CIS 4910) in 2001. This course now contains a lecture component, a formal development process, and incorporates industry-contributed projects that have resulted in significant department-industry connections.

Other teaching related activities

- Coach for USF ACM Programming Contest teams, 2000 and 2001 (with B. Albrecht)
 - Prepared three teams of four students and took them to the regional ACM programming contest at Georgia College and State University. Placed in the top 50% in 2000 and top 25% in 2001.

PRESENTATIONS, PANELS, SHORT COURSES, AND INVITED MEETINGS

Presentations and seminars

1. “New Directions for Reducing Energy Consumed by Information and Communications Technology,” invited presentation, *IDEA Conference*, University of South Florida, October 14, 2013.
2. “Green Networks: Substituting, Consolidating, and Scheduling to Save Energy,” invited presentation, *IEEE Online Conference on Green Communications*, online, September 27, 2012.
3. “Green Networks: Substituting, Consolidating, and Scheduling to Save Energy,” invited presentation at Télécom ParisTech, Paris, France, May 3, 2012.
4. “Green Networks: The Next Steps,” keynote presentation, *IEEE Latin-American Conference on Communications*, Bogotá, Colombia, September 15, 2010.
5. “Green Networks: Reducing the Energy Consumption of Networks,” keynote presentation, *The 2nd International Symposium on IT Convergence Engineering*, Pohang, Korea, August 19, 2010.
6. “Green Networks: Reducing the Energy Consumption of Networks” (extended version), invited presentation at the University of Carlos III, Madrid, Spain, June 2, 2010.
7. “Green Networks: Reducing the Energy Consumption of Networks,” invited presentation at the University of Perugia, Perugia, Italy, May 31, 2010.
8. “Green Networks: Opportunities and Challenges,” keynote presentation, *IEEE Conference of Local Computer Networks*, Zurich, Switzerland, October 22, 2009.
9. “An Energy Efficient Internet: Ongoing Work,” invited presentation, Cisco Green Research Symposium, Cisco Corporation, San Jose, California, March 5, 2008.
10. “Rapid PHY Selection (RPS): Emulation and Experiments using PAUSE,” presentation, IEEE 802.3 EEE Study Group, Orlando, Florida, March 13, 2007.
11. “Rapid PHY Selection: A Performance Evaluation of Control Policies,” presentation, IEEE 802.3 EEE Study Group, Monterey, California, January 15, 2007.
12. “Improving the Energy Efficiency of Networks: A Focus on Ethernet and End Devices,” invited presentation, Cisco Corporation, San Jose, California, October 20, 2006 (with B. Nordman).
13. “Presentation to the Board of Trustees of USF: The USF Intelligent Scarecrow,” invited presentation, USF Board of Trustees, September 7, 2006 (with students F. Blanquicet, A. Ng, and J. Ramsamooj).

14. “Reducing the Energy Consumption of Networked Devices – Overview,” seminar, Environmental Energy Technologies Division, Lawrence Berkeley National Laboratory, California, July 19, 2005 (with B. Nordman).
15. “Buffered Crossbar Switch – Performance and Design of Key Components,” seminar, SwitchCore AB, Lund, Sweden, June 10, 2004.
16. Open Problems in High-Speed Packet Switch Design,” seminar, Department of Communication Systems, Lund University, Sweden, January 29, 2004.
17. “The Next Frontier for Communications Networks: Power Management,” keynote presentation, *SPIE Performance and Control of Next Generation Communications Networks* at ITCom 2003, Orlando, Florida, September 2003.
18. “Capacity Planning for a Future KSC Consolidated Networking Infrastructure,” presentation, *NASA Kennedy Space Center 1st Annual Partners in Education and Research Conference*, Cocoa Beach, Florida, October 1998.
19. “Modeling Future Ethernet Protocols,” presentation, *CSIM Symposium – System Design in the Face of Changing Technologies*, Austin, Texas, August 1998.
20. “Multimedia on the Web, A Fast Link Isn’t Always Enough,” presentation, IEEE Signal Processing/Communications Society Meeting, Paradyne Corporation, Largo, Florida, September 1997.
21. “Integration of Voice, Video, Image, and Data traffic in a Single Computer Network,” presentation, Industrial Math Seminar, University of South Florida, Tampa, Florida, September 1995.

Panels

- “Service-Based Computing Strategy & Planning by IT Professionals,” panelist, *IEEE International Conference on Services Computing*, Orlando, Florida, July 13, 2005 (with A. Bragg, W. Clark, S. Liu, J. Williams, and L.-J. Zhang).

Short courses and tutorials

1. “A Short Course on Green Networks: The State of the Art,” invited short course (4 hours) at *IEEE Latin-American Conference on Communications*, Bogotá, Colombia, September 14, 2010.
2. “Green Networks: Improving the Energy Efficiency of ICT,” invited short course (25 hours) for the Pisa International School on the Next Generation Internet (University of Pisa), May 24-28, 2010.
3. “Reducing the Energy Consumption of Networked Devices – Tutorial,” invited tutorial, IEEE 802.3 Plenary Meeting, San Francisco, California, July 19, 2005 (with B. Nordman).
4. “An Overview of High-Speed Local Area Network Technologies,” tutorial, *IEEE Southeastcon*, Tampa, Florida, April 1996.

Invited meetings

1. “Science of Power Management,” workshop sponsored by National Science Foundation, Arlington, VA, April 9-10, 2009.
2. “NSF Future Internet Design (FIND) Summit,” summit held by National Science Foundation, Arlington, VA, October 12-14, 2009.

PUBLICATIONS

Journals and magazines (refereed)

1. M. Kargarmoakhar, M. Ross, Z. Hazari, S. Secules, M. Weiss, M. Georgiopoulos, and K. Christensen, “The Effect of Communities of Practice Scholarship Program on Students' Computing Identity” submitted to *ACM Transactions on Computing Education* in March 2023.
2. S. Lunn, M. Ross, Z. Hazari, M. Weiss, M. Georgiopoulos, and K. Christensen, “How Do Educational Experiences Predict Computing Identity?” *ACM Transactions on Computing Education*, Vol. 22, No. 2, pp. 1-28, June 2022.

3. N. von der Embse, K. Christensen, S. Kilgus, M. Mishra, and B. Chin, "Evaluating the Cost of Prevention Programming and Universal Screening with Discrete Event Simulation," *Administration and Policy in Mental Health and Mental Health Services Research*, February 2021.
4. S. Malla and K. Christensen, "The Effect of Server Energy Proportionality on Data Center Power Oversubscription," *Future Generation Computer Systems*, Vol. 104, pp. 119-130, January 2020.
5. S. Malla and K. Christensen, "A Survey on Power Management Techniques for Oversubscription of Multi-Tenant Data Centers," *ACM Computing Surveys*, Vol. 52, No. 1, Article 1, February 2019.
6. B. Nordman and K. Christensen, "DC Local Power Distribution: Technology, Deployment, and Pathways to Success," *IEEE Electrification Magazine*, Vol. 4, No. 2, pp. 29-36, June 2016.
7. N. Samteladze and K. Christensen, "DELTA++: Reducing the Size of Android Application Updates," *IEEE Internet Computing*, Vol. 18, No. 2, pp. 50-57, March/April 2014.
8. B. Nordman, K. Christensen, R. Melfi, B. Rosenblum, and R. Viera "Using Existing Network Infrastructure to Estimate Building Occupancy and Control Plugged-in Devices in User Workspaces," *International Journal of Communication Networks and Distributed Systems*, Vol. 12, No. 1, pp. 4-29, January 2014.
9. M. Mostowfi, K. Christensen, S. Lee, and J. Yun, "SME Web Energy Efficient Platform (SWEEP): A New Architecture for a Hybrid Web Server," *Sustainable Computing: Informatics and Systems*, Vol. 3, No. 4, pp. 249-261, December 2013.
10. A. Roginsky, K. Christensen, and M. Mostowfi, "Delay Behavior of On-Off Scheduling: Extending Idle Periods," *Applied Mathematics & Information Sciences*, Vol. 7, No. 6, pp. 2123-2136, November 2013.
11. R. Bolla, R. Bruschi, K. Christensen, F. Cucchietti, F. Davoli, and S. Singh, "The Potential Impact of Green Technologies in Next Generation Wireline Networks – Is There Room for Energy Savings Optimization?" *IEEE Communications*, Vol. 49, No. 8, pp. 80-86, August 2011.
12. K. Christensen, P. Reviriego, B. Nordman, M. Bennett, M. Mostowfi, and J. A. Maestro, "IEEE 802.3az: The Road to Energy Efficient Ethernet," *IEEE Communications*, Vol. 48, No. 11, pp. 50-56, November 2010.
13. B. Nordman and K. Christensen, "Greener PCs for the Enterprise," *IEEE IT Professional*, Vol. 11, No. 4, pp. 28-37, July/August 2009.
14. L. Summer, L. Gonzalez, M. Jimeno, and K. Christensen, "Development of a Nasogastric Tube (NGT) Insertion Simulator: A Collaborative Interdisciplinary Effort," *Computers, Informatics, Nursing Journal*, Vol. 27, No. 2, pp. 105-113, March/April 2009.
15. C. Gunaratne, K. Christensen, S. Suen, and B. Nordman, "Reducing the Energy Consumption of Ethernet with an Adaptive Link Rate (ALR)," *IEEE Transactions on Computers*, Vol. 57, No. 4, pp. 448-461, April 2008.
16. C. Gunaratne, K. Christensen, and B. Nordman, "Managing Energy Consumption Costs in Desktop PCs and LAN Switches with Proxying, Split TCP Connections, and Scaling of Link Speed," *International Journal of Network Management*, Vol. 15, No. 5, pp. 297-310, September/October 2005.
17. K. Yoshigoe, K. Christensen, and A. Roginsky, "Performance Evaluation of New Scheduling Methods for the RR/RR CICQ Switch," *Computer Communications*, Vol. 28, No. 4, pp. 417-428, March 15, 2005.
18. K. Christensen, C. Gunaratne, B. Nordman, and A. George, "The Next Frontier for Communications Networks: Power Management," *Computer Communications*, Vol. 27, No. 18, pp. 1758-1770, December 2004.
19. J. Shahbazian and K. Christensen, "TSGen: A Tool for Modeling of Frame Loss in Streaming Video," *International Journal of Network Management*, Vol. 14, No. 5, pp. 315-327, September-October 2004.
20. A. Aslam and K. Christensen, "A Parallel Packet Switch with Multiplexors Containing Virtual Input Queues," *Computer Communications*, Vol. 27, No. 13, pp. 1248-1263, August 2004.
21. T. Jepsen, P. Laplante, J. Williams, K. Christensen, D. Ferrante, and J. Morris, "Software in the New Millennium: A Virtual Roundtable," *IEEE IT Professional*, Vol. 6, No. 4, pp. 10-17, July/August 2004.
22. Z. Genova and K. Christensen, "Managing Routing Tables for URL Routers in Content Distribution Networks," *International Journal of Network Management*, Vol. 14, No. 3, pp. 177-192, May/June 2004.
23. K. Yoshigoe and K. Christensen, "An Evolution to Crossbar Switches with Buffered Cross Points," *IEEE Network*, Vol. 17, No. 5, pp. 48-56, September-October 2003.
24. V. Elliott and K. Christensen, "Characterizing and Reducing Route Oscillations in the Internet," *Computer Communications*, Vol. 26, No. 2, pp. 143-153, February 2003.

25. K. Christensen, D. Rundus, H. Fujinoki, and D. Davis, "A Crash Course for Preparing Students for a First Course in Computing: Did It Work?" *Journal of Engineering Education*, Vol. 91, No. 4, pp. 409-413, October 2002.
26. H. Fujinoki and K. Christensen, "The Directed Reverse Path Join (DRPJ) Protocol: An Efficient Multicast Routing Protocol," *Computer Communications*, Vol. 24, No. 12, pp. 1121-1133, July 2001.
27. A. Solleti and K. Christensen, "Efficient Transmission of Stored Video for Improved Management of Network Bandwidth," *International Journal of Network Management*, Vol. 10, No. 5, pp. 277-288, September-October 2000.
28. H. Fujinoki and K. Christensen, "A Routing Algorithm for Dynamic Multicast Trees with End-to-End Path Length Control," *Computer Communications*, Vol. 23, No. 2, pp. 101-114, January 2000.
29. V. Srinivasan, A. Roginsky, and K. Christensen, "Reducing ATM CAC Overhead by Utilising Aggregated Traffic Statistics," *IEE Proceedings on Communications*, Vol. 146, No. 4, pp. 209-212, August 1999.
30. A. Roginsky, K. Christensen, and V. Srinivasan, "New Methods for Shortest Path Selection for Multimedia Traffic with Two Delay Constraints," *Computer Communications*, Vol. 22, No. 17, pp. 1531-1539, October 1999.
31. Y. Lu and K. Christensen, "Using Selective Discard at the Receiver to Improve Real-Time Video Quality on an Ethernet Local Area Network," *International Journal of Network Management*, Vol. 9, No. 2, pp. 106-117, March-April 1999.
32. K. Christensen, M. Molle, and B. Yeger, "The Design of a Station-Centric Network Model for Evaluating Changes to the IEEE 802.3 Ethernet Standard," *Simulation*, Vol. 72, No. 1, pp. 33-47, January 1999.
33. M. Molle and K. Christensen, "The Effects of Controlling Capture on Multimedia Traffic for Shared Ethernet Systems," *Telecommunication Systems*, Vol. 9, No. 3-4, pp. 287-314, September 1998.
34. A. Roginsky, K. Christensen, and S. Polge, "Efficient Computation of Packet CRC from Partial CRCs with Application to the Cells-in-Frames Protocol," *Computer Communications*, Vol. 21, No. 7, pp. 653-661, June 1998.
35. K. Christensen and F. Gullledge, "Enabling Power Management for Network-Attached Computers," *International Journal of Network Management*, Vol. 8, No. 2, pp. 120-130, March-April 1998.
36. K. Christensen, "A Simulation Study of Enhanced Arbitration Methods for Improving Ethernet Performance," *Computer Communications*, Vol. 21, No. 1, pp. 24-36, February 1998.
37. K. Christensen and N. Javagal, "Prediction of Future World Wide Web Traffic Characteristics for Capacity Planning," *International Journal of Network Management*, Vol. 7, No. 5, pp. 264-276, September-October 1997.
38. A. Roginsky, L. Tomek, and K. Christensen, "Analysis of ATM Cell Loss for Systems with On/Off Traffic Sources," *IEE Proceedings on Communications*, Vol. 144, No. 3, pp. 129-134, June 1997.
39. K. Christensen, L. Haas, F. Noel, and N. Strole, "Local Area Networks – Evolving from Shared to Switched Access," *IBM Systems Journal*, Vol. 34, No. 3, pp. 347-374, 1995.

Conferences and workshops (refereed)

1. S. Lunn, M. Ross, Z. Hazari, M. Weiss, M. Georgiopoulos, and K. Christensen, "The Impact of Technical Interviews and other Professional and Cultural Experiences on Students' Computing Identity," *Proceedings of the 26th ACM Conference on Innovation and Technology in Computer Science Education (ITiCSE)*, July 2021.
2. M. Kargarmoakhar, S. Lunn, M. Ross, Z. Hazari, M. Weiss, K. Christensen, M. Georgiopoulos, and T. Solis, "Impact of Social and Programmatic Experiences on Students' Interest in Pursuing a Graduate Degree in a Computing Field," *Proceedings of ASEE Annual Conference*, July 2021.
3. S. Lunn, M. Ross, Z. Hazari, M. Weiss, M. Georgiopoulos, K. Christensen, and T. Solis, "Uneven Playing Field: Examining Preparation for Technical Interviews in Computing and the Role of Cultural Experiences," *Proceedings of ASEE Annual Conference*, July 2021.
4. J. Wang, Z. Beasley, K. Christensen, and S. Sarkar, "Increasing the Participation of Women in Computer Science and Engineering: A Systematic Approach for Culture Change," *Proceedings of ASEE Annual Conference*, July 2021.

5. M. Kargarmoakhar, S. Lunn, L. Zahedi, M. Ross, Z. Hazari, M. Weiss, M. Georgiopoulos, K. Christensen, and T. Solis, “Understanding the Experiences that Contribute to the Inclusion of Underrepresented Groups in Computing,” *Proceedings of ASEE/IEEE Frontiers in Education*, October 2020.
6. M. Kargarmoakhar, M. Ross, Z. Hazari, M. Weiss, M. Georgiopoulos, K. Christensen, and T. Solis, “Computing Pathways: A Quantitative Inquiry into the Dynamic Pathways of Students in Computing with Gender Comparisons,” *Proceedings of ASEE Annual Conference*, June 2020.
7. S. Malla, J. Wang, W. Hendrix, and K. Christensen, “Predicting Success for Computer Science Students,” *Proceedings of ASEE/IEEE Frontiers in Education*, October 2019.
8. M. Kargarmoakhar, M. Ross, Z. Hazari, M. Weiss, M. Georgiopoulos, and K. Christensen, “Influences of Friends and Family on Women’s Pursuit of Computing; a Sequential Explanator Design,” *Hawaii University International Conferences, Science, Technology & Engineering, Arts, Mathematics & Education*, June 2019.
9. M. Taheri, M. Ross, Z. Hazari, M. Weiss, M. Georgiopoulos, K. Christensen, T. Solis, D. Chari, and Z. Taheri, “Exploring Computing Identity and Persistence Across Multiple Groups Using Structural Equation Modeling,” *ASEE Annual Conference*, June 2019.
10. J. Wang, D. Goldgof, and K. Christensen, “WiCSE: Impact of a Women’s Support Group on Increasing the Percentage of Women Students in a Department of Computer Science and Engineering,” *Proceedings of ASEE Annual Conference*, June 2019.
11. S. Malla and K. Christensen, “Choosing the Best Server for a Data Center: The Importance of Workload Weighting,” *Proceedings of IEEE International Performance, Computing, and Communications Conference*, November 2018.
12. M. Taheri, M. Ross, Z. Hazari, M. Weiss, M. Georgiopoulos, K. Christensen, T. Solis, A. Garcia, and D. Chari, “A Structural Equation Model Analysis of Computing Identity Sub-Constructs and Student Academic Persistence,” *Proceedings of ASEE/IEEE Frontiers in Education*, October 2018.
13. A. Garcia, M. Ross, Z. Hazari, M. Weiss, K. Christensen, and M. Georgiopoulos, “Examining the Computing Identity of High-Achieving Underserved Computing Students on the Basis of Gender, Field, and Year in School.” *Proceedings of Collaborative Network for Engineering and Computing Diversity*, April 2018.
14. S. Malla and K. Christensen, “Reducing Power Use and Enabling Oversubscription in Multi-Tenant Data Centers Using Local Price,” *Proceedings of the IEEE International Conference on Autonomic Computing*, pp. 161-167, July 2017.
15. B. Nordman and K. Christensen, “The Need for Communications to Enable DC Power to be Successful,” *Proceedings of the IEEE First International Conference on DC Microgrids*, pp. 108-112, June 2015.
16. B. Nordman and K. Christensen, “DC Local Power Distribution with Microgrids and Nanogrids,” *Proceedings of the IEEE First International Conference on DC Microgrids*, pp. 199-204, June 2015.
17. K. Christensen and B. Nordman, “Back to the Future: A Need for Multi-Drop Ethernet for Cost-Effective Power Distribution,” *Proceedings of IEEE Conference on Local Computer Networks*, pp. 178-181, September 2014.
18. B. Nordman and K. Christensen, “Local Power Distribution with Nanogrids,” *Proceedings of the International Green Computing Conference*, June 2013.
19. M. Mostowfi, K. Christensen, S. Lee, and J. Yun, “Timed Redirection: HTTP Request Coalescing to Reduce Energy Use of Hybrid Web Servers,” *Proceedings of IEEE Conference on Local Computer Networks*, pp. 168-171, October 2012.
20. N. Samteladze and K. Christensen, “DELTA: Delta Encoding for Less Traffic for Apps,” *Proceedings of IEEE Conference on Local Computer Networks*, pp. 212-215, October 2012.
21. I. McLean and K. Christensen, “Reducing Energy Use: Automatic Selection of the Appropriate Communications Channel,” *Proceedings of IEEE Southeastcon*, March 2012.
22. M. Mostowfi and K. Christensen, “An Energy-Delay Model for a Packet Coalescer,” *Proceedings of IEEE Southeastcon*, March 2012.
23. K. Christensen, R. Perez, P. Panta, and P. Bedarahally, “Unifying Program-Level ABET Assessment Data Collection, Analysis, and Presentation,” *Proceedings of ASEE/IEEE Frontiers in Education*, pp. S1B1-S1B6, October 2011.
24. M. Olson, K. Christensen, SangHak Lee, and Jungmee Yun, “Hybrid Web Server: Traffic Analysis and Prototype,” *Proceedings of IEEE Conference on Local Computer Networks*, October 2011.

25. R. Melfi, B. Rosenblum, B. Nordman, and K. Christensen, "Measuring Building Occupancy Using Existing Network Infrastructure," *Proceedings of the International Green Computing Conference*, July 2011.
26. M. Mostowfi and K. Christensen, "Saving Energy in LAN Switches: Synchronized Packet Coalescing for Energy Efficient Ethernet," *Proceedings of the International Green Computing Conference*, July 2011.
27. A. Parisi and K. Christensen, "Integrating Demand Response Capability into Smart Appliances: Design and Evaluation of Distributed Scheduling," *Proceedings of the 6th International Conference on Energy Efficiency in Domestic Appliances and Lighting*, May 2011.
28. P. Reviriego, K. Christensen, and J. Maestro, "Using Coordinated Transmission with Energy Efficient Ethernet," *Proceedings of the 10th International IFIP TC6 Networking Conference (NETWORKING 2011)*, May 2011.
29. J. Blackburn and K. Christensen, "A Simulation Study of a New Green BitTorrent," *Proceedings of the First International Workshop on Green Communications (in conjunction with the IEEE International Conference on Communications)*, June 2009.
30. M. Jimeno, K. Christensen, and B. Nordman, "A Network Connection Proxy to Enable Hosts to Sleep and Save Energy," *Proceedings of the IEEE International Performance Computing and Communications Conference*, pp. 101-110, December 2008.
31. M. Jimeno and K. Christensen, "P2P Directory Search: Signature Array Hash Table," *Proceedings of the IEEE Conference on Local Computer Networks*, pp. 506-508, October 2008.
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CONTRIBUTIONS TO STANDARDS

Key contributor to the founding of two green networking standards initiatives

- Ecma 393 proxZZzy for sleeping hosts in 2009 (with B. Nordman, LBNL)
 - Standard completed and approved in February 2010
- IEEE 802.3az Energy Efficient Ethernet in 2006 (with B. Nordman, LBNL)
 - Standard completed and approved in September 2010

PUBLICITY

- Cited in press articles for research in improving the energy efficiency of buildings using implicit occupancy sensing. Key articles are:
 - D. Akst, “Phones to ‘Green’ an Office,” *Wall Street Journal*, page C4, December 21-22, 2013.
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- Cited in press articles and a YouTube video clip for research in improving the energy efficiency of networks. Key video clip and articles are:
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- Received significant press, including international radio and television, for the Microsoft Windows Embedded Student Challenge second place win in 2006. The following statement was made on August 4, 2006 by Randy Fillmore of USF Media Relations:
 - “The ‘intelligent scarecrow’ named J.J. – designed and built by four USF College of Engineering Computer Science and Engineering students to protect both the investment of aqua-farmers and the lives of birds that may prey upon their fish – placed second in Microsoft’s Third Annual Windows Embedded Student Challenge in 2006. Filmed by a crew from Discovery TV, Canada, and making two appearances on local TV (channels 10 and 13), over three months the smart scarecrow was featured in several radio interviews and appeared in newspapers, magazines, and websites throughout the U.S., Canada, Europe, Australia, the United Kingdom, the Middle East, and Asia, including India and China. J.J., the students who created him, and their faculty mentor, Ken Christensen, became the most widely traveled and longest lasting positive media story in USF history.”