

Ken Christensen

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BIOGRAPHICAL DATA

Born: Minneapolis, Minnesota (1960)
Raised: Gainesville, Florida
Married (1986) to Loraine (Newman); three children (born 1990, 1992, and 1996)
Languages: English (native), and Danish and Swedish (reading 50%)

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

CURRENT RESEARCH INTERESTS

Performance evaluation of computer networks; analytical and simulation modeling; packet switch architectures; power management at a system level for reduction of direct and induced energy use of network-attached devices.

ACADEMIC APPOINTMENTS

Full Professor, University of South Florida, 2007 to present
Associate Professor, University of South Florida, 2000 to 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. research, 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) and SIGMETRICS (performance measurement and evaluation)
- 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)

AWARDS

- 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 Hiroshi Fujinoki), 2001
- USF Outstanding Master’s Thesis Prize (chair for Arun 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. Green Networking: Reducing the Energy Use of LAN Switches and Connected Hosts, *Cisco Research Center*, 2008 to 2009, \$39,000.
2. 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).
3. 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).
4. REU Supplement to CNS-0520081, *National Science Foundation*, 2007 to 2008, \$12,000.
5. REU Supplement to CNS-0520081, *National Science Foundation*, 2006 to 2007, \$6,000.
6. 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).
7. 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).
8. 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).
9. 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).
10. 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).
11. Student Travel Support for 29th IEEE Local Computer Networks Conference (LCN), *National Science Foundation*, 2004, \$10,300.
12. RET Supplement to ANI-9875177, *National Science Foundation*, 2002, \$10,000.
13. REU Supplement to ANI-9875177,” *National Science Foundation*, 2002, \$5,500.
14. Advances in Networked Video to Improve Safety, Effectiveness, and Security of Florida Spaceport Operations, *Florida Space Research and Education Grant Program*, 2001, \$30,000.
15. International Travel Grant Support, *USF Division of Sponsored Research*, 2001, \$1,500.
16. REU Supplement to ANI-9875177, *National Science Foundation*, 2000, \$5,000.
17. 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.
18. 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).
19. Integrated Domain Engineering for Applications, *Honeywell Space Systems Group*, Largo, Florida, 1998, \$25,000 (M. Varanasi primary).
20. 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-PIs R. Perez and A. Callahan).
21. 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).

22. Performance Prediction for Large Computer Networks, the Next Step, *USF Research and Creative Scholarship Grants Program*, 1996 to 1997, \$7,500.

PROFESSIONAL SERVICE

Editorial

Editor-in-chief: *International Journal of Network Management* (Wiley), 2008 to present
 Associate editor: *IEEE IT Professional*, 2005 to 2006, and *International Journal of Network Management* (Wiley), 2005 to 2008
 Editorial boards: *Computer Communications* (Elsevier), 2000 to present, *International Journal of Network Management* (Wiley), 1996 to 2005, and *IEEE IT Professional*, 2006 to present

Guest Editorships

1. 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.
2. Special Issue on Performance Evaluation of IP Networks and Services, *Computer Communications* (with F. Huebner, AT&T), Vol. 26, No. 8, May 2003.
3. 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, IBM Journal of Research and Development, IET Electronics Letters, IEEE Journal on Selected Areas in Communication, IEEE Transactions on Communications, IEEE/ACM Transactions on Networking, IEEE Transactions on Parallel and Distributed Systems, Computer Networks, Performance Evaluation, International Journal of Network Management, IEEE Communications Magazine, IEEE ITPro Magazine, ETRI Journal, IEEE Transactions on Circuits and Systems II, Journal of Information Science and Engineering, and IEEE Communications Letters.*

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).
 Local chair: *IEEE LCN 2000* (Tampa), 2001 (Tampa), 2002 (Tampa), and 2004 (Tampa).

Conference and Workshop Organizing Committees

GreenComm 2009 (part of *IEEE ICC*) and *IEEE LCN 2008*.

Conference and Workshop Program Committees

- *IEEE LCN 1997 to 2008, IEEE IPCCC 2001 to 2004, IEEE MASCOTS 2008, IEEE SAINT 2002, IEEE Southeastcon 1996, IEEE Symposium on Ad hoc and Sensor Networks (AHSN) 2008, IEEE End-to-End Service Differentiation Workshop 2002, SPIE International Symposium on Voice, Video, and Data Communications 2000, and SPIE ITCOM 2003 and 2004.*

Conference and Workshop Reviewing

- *IEEE AHSN, IEEE GLOBECOM, IEEE ICC, IEEE INFOCOM, IEEE IPCCC, IEEE LCN, IEEE MASCOTS, IEEE High-Speed Local Networks Workshop, IEEE Workshop on End-to-End Service Differentiation, and ASEE Southeastern Section Conference.*

Miscellaneous Professional Service

- External reviewer for National Research Foundation (NRF), South Africa, 2006
- Reviewer and panelist for National Science Foundation (NSF), Arlington, Virginia, 2000 to 2003
- External examiner for a Ph.D. candidate, Nanyang Technological University, 2002
- Panelist for IEEE Admission and Advancement Panel, Tampa, 2000

UNIVERSITY SERVICE

Directorships

- Director of Department of Computer Science and Engineering Undergraduate Program, 2007 to present

Committees

- USF Undergraduate Council, 2008 to 2011
- USF Assessment Steering Committee, 2006 to present
- USF Graduate Council, 2004 to 2007
- USF Academic Computing Committee, 2002 to 2004
- USF International Admissions Advisory Committee, 2000 to 2003
- USF Internet2 Technical Committee, 2000 to 2001 (co-chair)
- College ABET Committee, 2007 to present
- College Curriculum Committee, 2008 to present
- College Computing Committee, 2008 to present
- Department ABET Quality Improvement Committee, 2006 to present (chair)
- Department Undergraduate Committee, 2005-present, 2007 to present (chair)
- Department Promotion and Tenure Committee, 2001 to 2006, 2007 to present (chair)
- Department Faculty Search Committee 2000 to 2005, and 2006 to 2007 (chair)
- Department Graduate Examinations Committee, 2005-2006 (chair)
- Department Graduate Committee, fall 2005 (chair), 2006 to present
- 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
- Department Equipment Committee, 1995 to 1996

Miscellaneous University Service

- ABET accreditation coordinator for two departmental programs (Computer Engineering and Computer Science), 2005 to 2007
- Reviewer for USF Graduate School outstanding dissertation and thesis awards, 2006 and 2007
- Reviewer for USF Division of Sponsored Research internal grant program, 2005 to 2007

COMMUNITY SERVICE

- Committee member for State of Florida K-12 Computer Science teacher certification, 2006
 - Reviewing of existing, and writing of new, questions for teacher certification exam.
- Judge for Florida State Science Fair, 1998 to 2002, 2006 to 2008
 - Judging of state-level high school science fair (multiple locations throughout Florida)
- Judge for Florida-Georgia Louis Stokes Alliance for Minority Participation Expo, 2003
 - Judging of southeast region computer science projects, Tampa.

- Volunteer for “Yes, We Care” program, 1995 to 1999
 - Judging, mentoring, and teaching for county-level minority middle and high school science and engineering program, Pinellas County.
- Judge for Pinellas County and Hillsborough County Science Fairs, 1997
 - Judging of district-level middle and high school science fairs.
- Judge for Florida High School Programming Contest, 1996
 - Judging of state-level high school computer programming contest, Tampa.
- Advisor for Raleigh, North Carolina Junior Achievement, 1985 and 1986
 - Advising of a Junior Achievement (high school) company sponsored by IBM.

INTERNATIONAL OUTREACH

- Hosted international visitors in the Department of Computer Science and Engineering
 - 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:

1. M. Jimeno, expected graduation 2010.
2. F. Blanquicet, expected graduation 2011.

Finished:

1. G. Perera, “Design and Evaluation of New Search Paradigms and Power Management for Peer-to-Peer File Sharing,” 2007.
 - Assistant Professor at Youngstown State University
2. C. Gunaratne, “Design and Evaluation of New Power Management Methods to Reduce Direct and Induced Energy Use of the Internet,” 2007.
 - Software Engineer, Focus, Inc., Tampa, Florida
3. K. Yoshigoe, “Design and Evaluation of the Combined Input and Crossbar Queued (CICQ) Switch,” 2004.
 - Assistant Professor at University of Arkansas at Little Rock
4. Z. Prodanoff, “Performance Evaluation of URL Routing for Content Distribution Networks,” 2003.
 - Assistant Professor at University of North Florida
5. 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.
 - Associate Professor at Southeastern Illinois University Edwardsville

Ph.D. Committees

Current:

1. J. Xu, expected graduation 2009 (chair M. Labrador).
2. C. Guerrero, expected graduation 2009 (chair M. Labrador).

3. H. Mahmoud, expected graduation 2009 (chair H. Arslan).
4. D. Molinares, expected graduation 2010 (chair M. Labrador).
5. P. Wightman, expected graduation 2010 (chair M. Labrador).

Finished:

1. M. Rana, "Unit Testing Database Applications Using SpecDB: A Database of Software Specifications," 2006 (chair A. Kandel).
2. A. Shenker, "Graph-Theoretic Techniques for Web Content Mining," 2003 (chair A. Kandel).
3. S. Dick, "Computational Intelligence in Software Quality Assurance," 2002 (chair A. Kandel).
4. R. Chandramouli, "Sequential Signal Detection Under Dependence," 1999 (chair N. Ranganathan).
5. R. King, "A Modular Design for Large Broadband ATM Switching Fabric," 1997 (chair M. Varanasi).

M.S. Major Professor**Current:**

- None

Finished:

1. S. Sakamuri, "Design and Evaluation of a New Authentication Mechanism for Validating the Sender of an Email," 2005.
2. J. Shahbazian, "Characterization and Generation of Streaming Video Traces," 2003.
3. V. Chandramohan, "Design and Performance Evaluation of a New Spatial Reuse FireWire Protocol," 2003.
4. J. Rogers, "Network Traffic Characterization through Bottleneck Queueing Simulations of Flow and Packet Traces," 2002 (with S. Katkooi).
5. V. Elliot, "Forcing Explicit BGP Withdrawals to Reduce Route Oscillation in the Internet," 2001.
6. S. Vaidya, "Performance Evaluation of a Single System Image Server Cluster using Duplicated MAC and IP Addresses," 2001.
7. A. Shaikh, "Traffic Characterization of TCP/IP Build Data Transfers on a Gigabit Ethernet," 2001.
8. K. Suryanarayanan, "Performance Evaluation of New methods for Load Balancing of Distributed Apache Web Servers," 2000.
9. A. Solleti, "Efficient Transmission of Stored Video for Improved Management of Network Bandwidth," 2000.
10. A. Mishra, "The RELOAD System for Improved Job Scheduling on a Network of Workstations," 1999.
11. C. Padhye, "Adaptive FEC Based Loss Control Algorithm for Voice Over IP Applications," 1999 (with W. Moreno).
12. J. Pinto, "A New Algorithm for Voice Playout Based on Adaptive Adjustment of Gaps," 1998.
13. Y. Lu, "Synchronization of Real-Time MPEG Video Communication over Ethernet Using a Selective Discard Scheme," 1998.
14. J. Drobisz, "Adaptive Sampling Methods for High Speed Networks to Determine Traffic Statistics including the Hurst Parameter," 1998.
15. S. Pinninti, "Network System Management Tool" (Project), 1998.
16. A. Chellamuthu, "Efficient Computation of Cyclic Redundancy Code" (Project), 1998.
17. V. Ballingam, "Reduction of Self-Similarity by Application-Level Traffic Shaping" (Project), 1997.
18. S. Batchu, "Synthetic Workload Generator for an Ethernet Local Area Network" (Project), 1996.
19. R. Rauscher, "Improving the Delivery of Time-Constrained Audio/Video Traffic over Ethernet," 1996.
20. 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:**

- S. Wakita, expected graduation 2009 (chair M. Labrador).

Finished:

1. S. Doraimani, "Filecules: A New Granularity for Resource Management in GRIDS," 2007 (chair A. Iamnitchi).
2. L. Voicu, "Modeling the Throughput Performance of the SF-SACK Protocol," 2006 (chair M. Labrador).
3. G. Lukachan, "Scalable Energy Efficient Location Aided Routing (SELAR) Protocol for Wireless Sensor Networks," 2005 (chair M. Labrador).
4. S. Babu, "A Measurement Based Admission Control Mechanism for Wireless Local Area Networks," 2005 (chair M. Labrador).
5. B. Pavlick, "A Fuzzy Logic Based Controller to Provide End-to-End Congestion Control for Streaming Media Applications," 2005 (chair M. Labrador).
6. S. Bassi, "A Web100-Dummysnet Testbed for Education and Research in Transport Layer Protocols," 2005 (chair M. Labrador).
7. Y. Easwaran, "Evaluation of Available Bandwidth Estimation Techniques (ABETs) and their Application in Improving TCP Performance," 2005 (chair M. Labrador).
8. H. Gilani, "Automatically Determine Route and Mode of Transport Using a GPS Enabled Phone," 2005 (chair R. Perez).
9. P. Saraph, "Test Case Reduction and Generation By Automated Input-Output Analysis Using Artificial Neural Networks," 2004 (chair A. Kandel).
10. P. Ikkurthy, "Software Testing Testbed for MPEG-4 Video Traffic Over IEEE 802.11B Wireless LANs," 2003 (chair M. Labrador).
11. S. Vangala, "Performance of TCP Over Wireless Networks," 2003 (chair M. Labrador).
12. K. Smith, "Locating Partial Discharge Phenomena in a Power System Using Neural Networks," 2001 (chair R. Perez).
13. M. Vanmali, "Using a Neural Network in the Software Testing Process," 2001 (chair A. Kandel).
14. C. Wei, "The Integration of CORBA with OODBMS in Distributed Computing Environment," 2000 (chair D. Rundus).
15. S. Dick, "Linguistic Techniques in Soft Computing," 1999 (chair A. Kandel).
16. A. Shenker, "The Development of a Fuzzy Object-Oriented Database Application With an Integrated Verification-Based Data Mining Method," 1999 (chair A. Kandel).
17. R. Dalal, "Orthogonal Wavelet Division Multiplexing (OWDM) for Broadband Wireless Communication," 1999 (Chair V. Jain, Electrical Engineering).
18. Z. Ding, "Observability and Controllability of Fuzzy Dynamic System," 1998 (chair A. Kandel).
19. A. Koneru, "A Web Based Learning Tool for Fortran" (Project), 1998 (chair D. Rundus).
20. L. Haddad, "A Decoder for the Nordstrom-Robinson (16, 8) Code" (Project), 1998 (chair M. Varansi).
21. S. Narasimhacharya, "USF Schedule Wizard," (Project) 1998 (chair D. Rundus).
22. Z. Ji, "Performance of a Partition-Based Algorithm for Valid-Time Equijoin," 1997 (chair M. Soo).
23. D. Gonzalez de Montemayor, "Improvement on Two-Terminal Lower Bounds," 1997 (chair H. Strayer).
24. M. Nusekabel, "Switched Network Partitioning Using Tabu Search," 1997 (chair H. Strayer).
25. N. Marchallick, "Improving Simulation Technology through Reinforcement Learning," 1997 (chair S. Mahadevan).
26. K. Ma, "Congestion Controls for ABR Services in ATM Networks," 1996 (chair R. Sankar, Electrical Engineering).
27. S. Ramadoss, "Adaptive Quantization and Fast Error Resilient Entropy Coding for Using JPEG in Wireless Communication," 1996 (chair N. Ranganathan).

Undergraduate Honors Students

1. W. Klerk, "Using a Simple Feedback Controller to Modulate Difficulty in Video Games," *USF Honors Thesis*, 2006.
2. A. Hopkins, "REMOTE++: A Tool for Automatic Remote Distribution of Programs on Windows Computers," *USF Honors Thesis*, 2003.
3. D. Svanstedt, "New Methods for Evaluating One-Way Delay in Computer Networks," *USF Honors Thesis*, 2002.
4. C. Bexley, "An Evaluation and Demonstration of COTS Components to Implement Wearable Video Cameras on Spaceport Technicians," *USF Honors Thesis*, 2002.
5. J. Shahbazian, "Design and Evaluation of a Computer Communication System that Uses a Novel Distributed Member Directory," *USF Honors Thesis*, 2001.
6. Z. Reynolds, "UDP versus TCP for Use in Bulk Data Transfer Applications," *USF Honors Thesis*, 2001.
7. J. Ferraz, "An Enhanced Simple Network Management Protocol Application for Network Engineering," *USF Honors Thesis*, 2000.
8. 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 and K-12 Teachers

1. Research Experience for Undergraduates, Department of Computer Science and Engineering, supervision of Jeremy Blackburn and Rula Alnaser, 2007 to 2008.
2. Research Experience for Undergraduates, Department of Computer Science and Engineering Summer REU program, supervision of Axel Vigo (from University of Puerto Rico, Mayagüez), summer 2007.
3. Research Experience for Undergraduates, Department of Computer Science and Engineering, supervision of Matt Landau, 2006 to 2007.
4. Research Experience for Undergraduates, Department of Computer Science and Engineering Summer REU program, supervision of Gabriel Quiles (from University of Puerto Rico, Mayagüez), summer 2006.
5. Research Experience for Undergraduates, Department of Computer Science and Engineering Summer REU program, supervision of Carlos Aviles and Edwin Torres (from University of Puerto Rico, Mayagüez), summer 2005.
6. Research Experience for Teachers, College of Engineering, supervision of T. Shaw (from Terrace Community Middle School, Tampa), summer 2002.
7. Research Experience for Teachers, College of Engineering, supervision of K. Bennett (from Terrace Community Middle School, Tampa), summer 2001.

TEACHING

Innovations and Courses Developed

- Developed (with D. Rundus) the *CSE Volunteers* service learning program in 2004. This program coordinates 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.

Extracurricular

- 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.

Courses Taught

Course name and number	Credits	When taught
<i>Discrete Mathematics (CSC 340)</i>	3	F93 (Campbell University)
<i>Introduction to “C” Programming (CSC 375)</i>	3	S94 (Campbell University)
<i>Computer Tools for Engineers (EGN 2210)</i>	3	Su97, F97, F98, and F99
<i>Foundations of Engineering (EGN 3000)</i>	1	F03
<i>Logic Design (CDA 3201)</i>	3	F96 and F01
<i>Computer Networks (EEL 4781)</i>	3	S96, F96, S97, S00, F02, S06, and F08
<i>CSE Volunteers (CIS 4900)</i>	1	F04, S05, F05, S06, F06, S07, F07, S08, and F08
<i>Senior Project (CIS 4910)</i>	2	S96, F99, F01, S02, F02, S03, F03, F04, S05, F05, S06, F06, S07, F07, S08, and F08
<i>Simulation (CIS 4930)</i>	3	S96, S98, S99, and S05
<i>Capacity Planning (CIS 4930)</i>	3	S01 and F01
<i>Computer Networks (CIS 6930)</i>	3	F95, F96, F97, S99, S00, F00, and F03
<i>Advanced Networks (CIS 6930)</i>	3	S98, S03, and F04

INVITED TALKS AND PANELS

1. “An Energy Efficient Internet: Ongoing Work,” invited presentation, Cisco Green Research Symposium, Cisco Corporation, San Jose, California, March 5, 2008.
2. “Rapid PHY Selection (RPS): Emulation and Experiments using PAUSE,” presentation, IEEE 802.3 EEE Study Group, Orlando, Florida, March 13, 2007.
3. “Rapid PHY Selection: A Performance Evaluation of Control Policies,” presentation, IEEE 802.3 EEE Study Group, Monterey, California, January 15, 2007.
4. “Improving the Energy Efficiency of Networks: A Focus on Ethernet and End Devices,” presentation, Cisco Corporation, San Jose, California, October 20, 2006 (with B. Nordman).
5. “Presentation to the Board of Trustees of USF: The USF Intelligent Scarecrow,” presentation, USF Board of Trustees, September 7, 2006 (with students F. Blanquicet, A. Ng, and J. Ramsamooj).
6. “Reducing the Energy Consumption of Networked Devices – Tutorial,” tutorial, IEEE 802.3 Plenary Meeting, San Francisco, California, July 19, 2005 (with B. Nordman).
7. “Reducing the Energy Consumption of Networked Devices – Overview,” seminar, Environmental Energy Technologies Division, Lawrence Berkeley National Laboratory, California, July 19, 2005 (with B. Nordman).
8. “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).
9. “Buffered Crossbar Switch – Performance and Design of Key Components,” seminar, SwitchCore AB, Lund, Sweden, June 10, 2004.
10. “Open Problems in High-Speed Packet Switch Design,” seminar, Department of Communication Systems, Lund University, Sweden, January 29, 2004.
11. “The Next Frontier for Communications Networks: Power Management,” keynote talk, *SPIE Performance and Control of Next Generation Communications Networks* at ITCOM 2003, Orlando, Florida, September 2003.
12. “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.
13. “Modeling Future Ethernet Protocols,” presentation, *CSIM Symposium – System Design in the Face of Changing Technologies*, Austin, Texas, August 1998.
14. “Multimedia on the Web, A Fast Link Isn’t Always Enough,” talk, IEEE Signal Processing/Communications Society Meeting, Paradyne Corporation, Largo, Florida, September 1997.
15. “An Overview of High-Speed Local Area Network Technologies,” tutorial, *IEEE Southeastcon*, Tampa, Florida, April 1996.

16. “Integration of Voice, Video, Image, and Data traffic in a Single Computer Network,” talk, Industrial Math Seminar, University of South Florida, Tampa, Florida, September 1995.

PUBLICATIONS

Journals (refereed)

1. L. Summer, L. Gonzalez, M. Jimeno, and K Christensen, “Development of a Nasogastric Tube (NGT) Insertion Simulator: A Collaborative Interdisciplinary Effort,” to appear in *Computers, Informatics, Nursing Journal* in 2009.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. V. Elliott and K. Christensen, “Characterizing and Reducing Route Oscillations in the Internet,” *Computer Communications*, Vol. 26, No. 2, pp. 143-153, February 2003.
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- Received significant press, including national radio and television, for the Microsoft Windows Embedded Student Challenge second place win in 2006. The following statement was made:
 - “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.**” (Randy Fillmore (USF Media Relations), August 4, 2006).