

CURRICULUM VITAE

CV SECTION 1: Employment History/Awards

NAME Christos Papadopoulos

ADDRESS Department of Computer Science

Colorado State University

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URL: <http://cs.colostate.edu/~christos/>

EDUCATION

1999 D.Sc. in Computer Science, Washington University in St. Louis

1992. M.S. in Computer Science, Washington University in St. Louis

1989 B.S. in Computer Science, Queens College (CUNY) New York

1983 Diploma of Technician Engineer, Higher Technical Institute, Cyprus

RESEARCH INTERESTS

Network Protocols, Network Security, Network Measurements, Multimedia Communications

ACADEMIC POSITIONS

(2006-present) associate professor, computer science, Colorado State University

(1999-2006) assistant professor, computer science, University of Southern California

SABATICALS

None

OTHER POSITIONS

(1989–1999) research assistant, computer science, Computer and Communications Research Center (CCRC) and Advanced Research Laboratory (ARL), Washington University in St. Louis MO

CURRENT JOB DESCRIPTION

40% Teaching, 53% Research/Creative Activity, 7% Service/Outreach, 0% Admin.

HONORS AND AWARDS

Career Award, NSF, 2002

CV SECTION 2: Publications/Scholarly Record

PUBLISHED WORKS

Books:

None

Refereed Journal Articles:

1. X. He, C. Papadopoulos, J. Heidemann, "Remote Detection of Bottleneck Links Using Spectral and Statistical Methods", Computer Networks, Volume 53 Issue, Feb 2009.
2. J. Mirkovic, P. Reiher, C. Papadopoulos, A. Hussain, M. Shepard, M. Berg and R. Jung, "Testings a Collaborative DDoS Defense in a Red Team/Blue Team Exercise," IEEE Transactions On Computers, v. 57, n. 7, July 2008.
3. K. Hwang, M. Cai, J. Pan, C. Papadopoulos, "WormShield: Fast Worm Signature Generation with Distributed Fingerprint Aggregation", IEEE Transactions on Dependable and Secure Computing, Volume 4, Issue 2, Pages 88-104, April 2007.
4. "A Framework for Incremental Deployment Strategies for Router-assisted Services," by Xinming He, Christos Papadopoulos, and Pavlin Radoslavov. IEEE/ACM Transactions on Networking. August 2006.
5. "NAM: A Network Adaptable Middleware to Enhance Response Time of Web Services," by S. Ghandeharizadeh, C. Papadopoulos, M. Cai, R. Zhou, P. Pol. International Journal of Web Services Research, 2(4), 1-20, October-December 2005.
6. "Distinguishing between Single and Multi-source Attacks Using Signal Processing," by Alefiya Hussain, John Heidemann, Christos Papadopoulos. Computer Networks Journal, Vol. 46, Issue 4, pp.479-503, November 2004.
7. "Performance of Networked XML-driven Cooperative Applications," by S. Ghandeharizadeh, C. Papadopoulos, M. Cai, and K. K. Chintalapudi. Journal of Concurrent Engineering: Research and Applications, Volume 12, Number 3, pp.195-204, September 2004.
8. "A Comparison of Application-level and Router-assisted Hierarchical Schemes for Reliable Multicast," by Pavlin Radoslavov, Christos Papadopoulos, Ramesh Govindan, and Deborah Estrin. IEEE/ACM Transactions on Networking, Vol. 12, No. 3, pp. 469-482, June 2004.
9. "LMS: A Router-assisted Scheme for Reliable Multicast," by Christos Papadopoulos, Guru Parulkar and George Varghese. IEEE/ACM Transactions on Networking, Vol. 12, No. 3, pp. 456-468, June 2004.
10. "Experimental Evaluation of SunOS IPC and TCP/IP Protocol Implementation," by Christos Papadopoulos and Guru Parulkar, ACM Transactions on Networking, Vol. 1, No. 2, pp.199 - 216, April 1993.

Accepted for Publication

Textbooks:

None

Refereed Chapters in Books:

1. "Performance of Networked XML-driven Cooperative Applications," by S. Ghandeharizadeh, C. Papadopoulos, M. Cai, and K. K. Chintalapudi. Kluwer Academic Publisher, 2002.

Refereed Proceedings/Transactions:

1. S. DiBenedetto, D. Massey, C. Papadopoulos, P. Walsh, "Analyzing the Aftermath of the McColo Shutdown", the Workshop on Trust and Security in the Future Internet (FIST) (held in conjunction with SAINT 2009), Seattle, WA, July 2009.
2. John Heidemann and Christos Papadopoulos. Uses and Challenges for Network Datasets. In Proceedings of the IEEE Cybersecurity Applications and Technologies Conference for Homeland Security (CATCH), Washington, DC, USA, IEEE. March, 2009.
3. John Heidemann, Yuri Pradkin, Ramesh Govindan, Christos Papadopoulos, Genevieve Bartlett, and Joseph Bannister. Census and Survey of the Visible Internet. In Proceedings of the ACM Internet Measurement Conference, p. 169-182. Vouliagmeni, Greece, ACM. October 2008.
4. "Understanding Passive and Active Service Discovery," by Genevieve Bartlett and John Heidemann and Christos Papadopoulos. Proceedings of the 6th AMC SIGCOMM Conference on Internet Measurement Conference (IMC), San Diego, CA, Oct 2007.
5. Inherent Behaviors for On-line Detection of Peer-to-Peer File Sharing," by Genevieve Bartlett, John Heidemann and Christos Papadopoulos. Proceedings of 10th IEEE Global Internet Symposium (GI '07) in conjunction with IEEE INFOCOM 2007. Anchorage, AK, USA, May 2007.
6. Urbashi Mitra, John Heidemann Antonio Ortega, and Christos Papadopoulos. Detecting and Identifying Malware: A New Signal Processing Goal. IEEE Signal Processing Magazine, 23 (5), pp. 107-111, September 2006.
7. "Identification of Repeated Denial of Service Attacks," by Alefiya Hussain, John Heidemann and Christos Papadopoulos. In Proceedings of the IEEE Infocom, Barcelona, Spain, IEEE. April, 2006.
8. "Experiences with a Continuous Network Tracing Infrastructure," by Alefiya Hussain, Genevieve Bartlett, Yuri Pryadkin, John Heidemann, Christos Papadopoulos, Joseph Bannister. MineNet-05: Workshop on Mining Network Data (MineNet 2005). Co-located with Sigcomm 2005. Philadelphia, PA, August 2005.
9. "A Second Report on the User Experiments in the Distributed Immersive Performance Project," by E. Chew, R. Zimmermann, A.A. Sawchuk, C. Papadopoulos, C. Kyriakakis, C. Tanoue, D. Desai, M. Pawar, R. Sinha, and W. Meyer. 5th Open Workshop of MUSICNETWORK: Integration of Music in Multimedia Applications. Vienna, Austria, July 2005.
10. "Distributed Immersive Performance," by Elaine Chew and Alexander Sawchuk, Roger Zimmermann, The Tosheff Piano Duo (Vely Stoyanova and Ilia Tosheff), Christos Kyriakakis, Christos Papadopoulos, Alexandre Francois and Anja Volk. Presented at the panel session on "The Internet for Ensemble Performance" at NASM (National Association of the Schools of Music) Annual Meeting, San Diego, CA December 2004.
11. "CyberSeer: 3D Audio-visual Immersion for Network Security and Management," by Christos Papadopoulos, Chris Kyriakakis, Alexander Sawchuk and Xinming He. CCS

- Workshop on Visualization and Data Mining for Computer Security (VizSec), Fairfax, VA, October 2004.
12. "Musical Interaction at a Distance," by Elaine Chew, Roger Zimmermann, Alexander A. Sawchuk, Chris Kyriakakis, Christos Papadopoulos, Alexandre R. J. Francois, Gerry Kim and Anja Volk. Accepted for publication at the 4th Open Workshop of MUSICNETWORK, Universitat Pompeu Fabra, Barcelona, Spain, September 2004.
 13. "An Adaptive Multiple Retransmission Technique for Continuous Media Streams." Rishi Sinha and Christos Papadopoulos. In Proceedings of The 14th International Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV). Kinsale, County Cork, Ireland, June 2004.
 14. "The Remote Media Immersion System," by Roger Zimmermann, Chris Kyriakakis, Cyrus Shahabi, Christos Papadopoulos, Alexander A. Sawchuk, Ulrich Neumann. Published in the IEEE MultiMedia Magazine, special issue on "Digital Multimedia on Demand," Vol.11(2):48-57, April-June 2004.
 15. "From Remote Media Immersion to Distributed Immersive Performance." A.A. Sawchuk, E. Chew, R. Zimmermann, C. Papadopoulos and C. Kyriakakis. ACM SIGMM 2003 Workshop on Experiential Telepresence (ETP 2003) November 7, 2003, Berkeley, California, USA. In conjunction with ACM Multimedia 2003.
 16. "NAM: A Network Adaptable Middleware to Enhance Response Time of Web Services," by S. Ghandeharizadeh, C. Papadopoulos, P. Pol, R. Zhou. Proceedings of the 11th ACM/IEEE International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunications Systems (MASCOTS), Orlando, FL, October 2003.
 17. "A Framework for Classifying Denial of Service Attacks," by Alefiya Hussain, John Heidemann, Christos Papadopoulos. In Proceedings of Sigcomm 2003, Karlsruhe, Germany, August 2003.
 18. "Loss Concealment for Multi-channel Streaming Audio," by Rishi Sinha, Christos Papadopoulos, Chris Kyriakakis. In Proceedings of The 13th International Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV). Monterey, CA, June 2003.
 19. "Proteus: A System for Dynamically Composing and Intelligently Executing Web Services," by Craig A. Knoblock, Christos Papadopoulos, Cyrus Shahabi, Esam Alwagait, Jose Luis Ambite, Min Cai, Ching-Chien Chen, Parikshit Pol, Rolfe Schmidt, Saihong Song, Snehal Thakkar, and Runfang Zhou. Proceeding of the First International Conference on Web Services (ICWS), Las Vegas, NV, June 2003.
 20. "Cossack: Coordinated Suppression of Simultaneous Attacks," by Christos Papadopoulos, Robert Lindell, John Mehringer and Alefiya Hussain. Proceedings of DISCEX 3, Arlington, VA, April 2003.
 21. "A Framework for Incremental Deployment Strategies for Router-assisted Services," by Xinming He, Christos Papadopoulos, and Pavlin Radoslavov. In Proceedings of IEEE Infocom 2003.
 22. "Eliminating Steganography in Internet Traffic with Active Wardens," by Gina Fisk, Mike Fisk, Christos Papadopoulos and Joshua Neil. In Proceedings of the 5th International Workshop on Information Hiding. Noordwijkerhout, The Netherlands, Oct. 7-9 2002, pp. 17-33.

23. "Using ns in the Classroom and the Lab," by Christos Papadopoulos and John Heidemann. Sigcomm Educational Workshop, Pittsburg, PA, August 2002.
24. "Performance of Networked XML-driven Cooperative Applications," by S. Ghandeharizadeh, C. Papadopoulos, M. Cai, K. K. Chintalapudi. In Proceedings of Second International Workshop on Cooperative Internet Computing (CIC, held in conjunction with VLDB), August 2002.
25. "A Comparison of Application-level and Router-Assisted Hierarchical Schemes for Reliable Multicast," by Pavlin Radoslavov, Christos Papadopoulos, Ramesh Govindan, and Deborah Estrin. Proceedings of IEEE Infocom 2001, Anchorage, Alaska, April 2001.
26. "Incremental Deployment of a Router-assisted Reliable Multicast Scheme," by Christos Papadopoulos and Emanouil Laliotis, Proc. of Networked Group Communications (NGC2000), Stanford University, Palo Alto, CA. November 2000.
27. "An Error Control Scheme for Large-scale Multicast Applications," by Christos Papadopoulos, Guru Parulkar and George Varghese, IEEE Infocom '98, March 1998. Also appeared as a Brief Announcement at Proc. of Principles of Distributed Computing (PODC), June 28-July 2, 1998, Puerto Vallarta, Mexico.
28. "Retransmission-based Error Control for Continuous Media Applications," by Christos Papadopoulos and Guru Parulkar, Proc. of the Sixth International Workshop for Network and Operating Systems Support for Digital Audio and Video, NOSSDAV '96, Zushi, Japan, April 23-26, 1996.
29. "Implosion Control in Multipoint Transport Protocols," by Christos Papadopoulos and Guru Parulkar, Tenth Annual IEEE Workshop on Computer Communications, Eastsound, Washington, September 1995.
30. "The 3M Project: Multipoint Multimedia Applications on Multiprocessor Workstations and Servers," by Guru Parulkar, Milind Buddhikot, Charles Cranor, Zubin Dittia and Christos Papadopoulos, Proc. of IEEE Workshop on High Performance Communication Systems, September 1993.
31. "Experimental Evaluation of SunOS IPC and TCP/IP Protocol Implementation," by Christos Papadopoulos and Guru Parulkar, IEEE Infocom '93, April 1993.

Non-Refereed Journal Articles/Chapters/Proceedings/Transactions:

1. Genevieve Bartlett, John Heidemann, and Christos Papadopoulos. Using Low-Rate Flow Periodicities for Anomaly Detection: Extended. Technical Report ISI-TR-2009-661, USC/Information Sciences Institute, August, 2009.
2. Diel N., Gadkari K., Steiner A., DiBenedetto S., Papadopoulos C., "Characterizing TCP Resets in Established Connections". Colorado State University Technical Report, CS-08-102.
3. John Heidemann, Yuri Pradkin, Ramesh Govindan, Christos Papadopoulos, Genevieve Bartlett, and Joseph Bannister. Census and Survey of the Visible Internet (extended). Technical Report ISI-TR-2008-649b, USC/Information Sciences Institute, February 2008. Updated August 2008.
4. "Exploring Visible Internet Hosts through Census and Survey," by John Heidemann, Yuri Pradkin, Ramesh Govindan, Christos Papadopoulos, and Joseph Bannister. Technical Report ISI-TR-2007-640, USC/Information Sciences Institute, May, 2007.

5. Genevieve Bartlett, John Heidemann, and Christos Papadopoulos. Inherent Behaviors for On-line Detection of Peer-to-Peer File Sharing. Technical Report ISI-TR-2006-647, USC/Information Sciences Institute, December 2006.
6. "Internet Packet Size Distributions: Some Observations," by Rishi Sinha, Christos Papadopoulos, and John Heidemann. Technical Report ISI-TR-2007-643, USC/Information Sciences Institute, May, 2007. Originally released October 2005 as web page: <http://netweb.usc.edu/rsinha/pkt-sizes/>.
7. Xinming He, Christos Papadopoulos, John Heidemann, Urbashi Mitra, Usman Riaz, and Alefiya Hussain. Spectral Analysis of Bottleneck Traffic. Technical Report USC-CSD-TR-05-854, University of Southern California Computer Science Department, May, 2005.
8. Rishi Sinha, Christos Papadopoulos, and John Heidemann. Fingerprinting Internet Paths using Packet Pair Dispersion. Technical Report 06-876, University of Southern California Computer Science Department, February 2005.
9. "Spectral Characteristics of Saturated Links." Xinming He, Christos Papadopoulos, John Heidemann and Alefiya Hussain. Technical Report USC-TR-04-827, University of Southern California Computer Science Department, 2004.
10. "Identification of Repeated Attacks Using Network Traffic Forensics." Alefiya Hussain, John Heidemann and Christos Papadopoulos. Technical Report, ISI-TR-2003-577b, USC/Information Sciences Institute, 2003.
11. "A Framework for Classifying Denial of Service Attacks - Extended version," by Alefiya Hussain, John Heidemann, and Christos Papadopoulos. Technical Report, ISI-TR-2003-569b, USC/Information Sciences Institute, June, 2003.

CONTRACTS & GRANTS

Externally Funded Projects as PI

1. (2006-8) Christos Papadopoulos, "CAREER: NetSams: Network Assistance for the Internet". \$363,163. Funding Agency: NSF, No-cost extension to February 2008. Transfer to Colorado State: \$116.7K
2. (2004-4) Christos Papadopoulos. Pratt and Whitney Institute for Collaborative Engineering. \$17,340. Funding agency: InHa University, South Korea. June 2004 – December 2004.
3. (2002-3) Christos Papadopoulos, "Looking for DDoS: Trace Analysis of Internet Traffic," \$45K. Funding Agency: Los Alamos National Laboratory June 2002 - January 2003.
4. (2001-3) Christos Papadopoulos, Ramesh Govindan and Bob Lindell, "Coordinated Suppression of Simultaneous Attacks (*COSSACK*)." Funding agency: DARPA, \$1.2M. July 2001 - June 2003.
5. (2002-7) Christos Papadopoulos, "CAREER: NetSams: Network Assistance for the Internet". \$363,163. Funding Agency: NSF, March 2002 - February 2007.
6. (2000-1) Christos Papadopoulos, "Router Assisted Internet Multicast Services (*RAIMS*)". Funding agency: Cisco, \$65K. October 2000.

Externally Funded Projects as Co-PI

1. (2007-12) John Heidemann and Christos Papadopoulos, "LANDER-2007: Los Angeles Network Data Exchange Repository." \$3M. Funding Agency: HSARPA. August 2007 - July 2012. Colorado State subcontract: \$420K.
2. (2006-9) John Heidemann, Christos Papadopoulos, Urbashi Mitra, Antonio Ortega. "Maltraffic Analysis and Detection in Challenging and Aggregate Traffic (MADCAT)." \$896K. Funding Agency: NSF. October 2006 – September 2009. Colorado State subcontract: \$223.7K. No cost extension through September 2010.
3. (2006-9) Boris Rozovsky, I. Cohen (USC), A.L. Bertozzi (UCLA), C. Papadopoulos (USC), P.J. Brantingham (UCLA), A. Tartakovsky (USC), T. Chan (UCLA), V.V. Veeravalli (UIUC), H.V. Poor (Princeton). "Spatio-temporal Nonlinear Filtering with Applications to Information Assurance and Counter Terrorism." \$5M. Program: Multidisciplinary Research Program of the URI (MURI). Funding Agency: Office of Naval Research. May 2006 – November 2009. Colorado State subcontract: \$123K for three years (option years TBD).
4. (2006-6) Christos Papadopoulos, John Heidemann, Urbashi Mitra, Antonio Ortega. "Spectral Analysis Techniques to Identify Security Problems in Aggregate Network Traffic." \$83K. Funding Agency: Cisco. January – December 2006.
5. (2004-6) Leana Golubchik, B. Clifford Neuman, Christos Papadopoulos (co-PI), Gerard G. Medioni, and Nenad Medvidovic. "Collaborative Project: An Innovative Information Assurance and Security Technology Capacity Development and Outreach Program." \$300K. Funding Agency: NSF. August 2004 – July 2006.
6. (2004-6) John Heidemann and Christos Papadopoulos, "LANDER: Los Angeles Network Data Exchange Repository." \$2.2M. Funding Agency: HSARPA. July 2004 - December 2006.
7. (2003-5) Alexander Sawchuk, Christos Papadopoulos, Leana Golubchick, Roger Zimmerman, and Chris Kyriakakis. "Acquisition of Equipment for Distributed Immersive Performance." \$400K. Funding Agency: NSF. Duration: Sept. 2003 – August 2005.
8. (2003-3) Shahram Ghandeharizadeh, Craig Knoblock, Christos Papadopoulos and Cyrus Shahabi, "Web Services". \$250K. Funding Agency: Microsoft Corporation. January - December 2003.
9. (2002-3) John Heidemann and Christos Papadopoulos, "SAMAN-DDoS." 470K. Funding Agency: DARPA. November 2002.
10. (2000-3) Deborah Estrin, John Heidemann, Christos Papadopoulos, and Jong-suk Ahn, "Collaborative Simulation for Education and Research (CONSER)", Funding agency: NSF \$1.5M. May 2000 - April 2003.

PAPERS PRESENTED/SYMPOSIA/INVITED LECTURES/PROFESSIONAL MEETINGS/WORKSHOPS

1. "Census and Survey of the Visible Internet." University of Cyprus, December 2009.
2. "Lander Progress Report." FRGP Engineers, July 2009.
3. "Towards Best Practices for Active Network Measurements." AIMS 2009, San Diego CA, February 2009.
4. "Coffee with CSU." IsTec IAB meeting, Boulder CO, November 2008.
5. "Spectral Approaches to DDoS Attacks." MURI PI Meeting, Brown University, September 2008.
6. "Census and Survey of the Visible Internet." *Invited presentation*. FORTH-ICS, Crete, May 2007.
7. "Spectral Approaches to DDoS Attacks." MURI PI Meeting, Brown University, November 2006.
8. "Fingerprinting Internet Paths Using Packet-Pair Dispersion." *Invited presentation*. University of Toronto, March 2006.
9. "Fingerprinting Internet Paths Using Packet-Pair Dispersion." *Invited presentation*. Colorado State University, February 2006.
10. "Defending Against DDoS Attacks." *Invited presentation*. Colorado State University, November 2005.
11. "Investigating Spectral Analysis for Network Traffic." *Invited presentation*. Intel Research, London England. September 2005.
12. "Cossack: Coordinated Suppression of Simultaneous Attacks, and ANT: Analysis of Network Traffic." *Invited presentation*. Georgia Tech, GA. August 2004.
13. "Cossack: Coordinated Suppression of Simultaneous Attacks, and ANT: Analysis of Network Traffic." *Invited presentation*. Massachusetts Institute of Technology, MA. August 2004.
14. "Cossack: Coordinated Suppression of Simultaneous Attacks, and ANT: Analysis of Network Traffic." *Invited presentation*. Columbia University, NY. July 2004.
15. "Cossack: Coordinated Suppression of Simultaneous Attacks, and ANT: Analysis of Network Traffic." *Invited presentation*. University of Virginia, VA. July 2004.
16. "Spectral Techniques for Internet Traffic." *Invited presentation*. Data Catalog Workshop, CAIDA, San Diego, CA. June 2004.
17. "Spectral Techniques for Analyzing Internet Traffic." *Invited presentation*. ICSI Center for Internet Research, Berkeley, CA. March 2004.
18. "Spectral Analysis: New Techniques for Characterizing Internet Traffic." *Invited presentation*. NSF, Arlington VA. February 2004.
19. "Characterizing DDoS Attacks." *Invited presentation*. Statistical and Applied Mathematical Sciences Institute (SAMSI), Research Triangle Park, NC. October 2003.
20. "Cossack: Coordinated Suppression of Simultaneous Attacks." *Invited presentation*. CERT, Carnegie Mellon University, Pittsburgh, PA. August 2002.

21. "Distributed Immersive performance." *Invited presentation*. The 2nd International Workshop on Information Technology, Nicosia, Cyprus. May 2002.
22. "Networking Issues in MIE." IMSC Annual NSF Site visit. USC. June 2001.
23. "Cossack: Coordinated Suppression of Simultaneous Attacks." *Invited presentation*. Los Alamos National Laboratories. March 2002.
24. "Networking Issues in MIE." IMSC Annual NSF Site visit. USC. June 2000.
25. "RAIMS: an Architecture for Router-assisted Internet Multicast Services." *Invited presentation*. ETH, Zurich, Switzerland. October 2000.
26. "LMS Performance and Applications." Fifth Reliable Multicast Research Group meeting, Arlington VA. December 3-4 1998.
27. "Performance Comparison of LMS and PGM using NS." Fourth Reliable Multicast Research Group meeting, London UK. July 6-7 1998.
28. "An Error Control Scheme for Large-scale Multicast Applications." IEEE Infocom '98, San Francisco, CA. March 1998.
29. "Comparison of LMS, AIM and PGM," Third Reliable Multicast Research Group meeting, Orlando, FL. February 1998.
30. "An Error Control Scheme for Large-scale Multicast Applications." Second Reliable Multicast Research Group meeting, Cannes France. September 1997.
31. "Experimental Evaluation of SunOS IPC and TCP/IP Protocol Implementation." IEEE Infocom '93, San Francisco, CA. April 1993.

OTHER ACTIVITIES/ACCOMPLISHMENTS – PUBLICATIONS/SCHOLARLY RECORD

2008-9: Helped organize the annual security exercise (CANVAS) that includes students are Colorado State University, US Air Force Academy, Denver University and other Colorado universities.

Involved in an ongoing effort to publish network traces through the DHS-funded program PREDICT, to benefit the community of security researchers.

**CV SECTION 3: EVIDENCE OF TEACHING AND ADVISING
EFFECTIVENESS**

TEACHING:

Year	Semester	Course No/Title	Cr. Hours	Enrollment
2006	Fall	CS457 – Computers/Internet	4	33
2007	Spring	CS680 - Adv Networking	4	9
2007	Fall	CS370 - Operating Systems	4	42
2008	Spring	CS680 – Adv Networking	4	4
2008	Fall	CS457- Computers/Internet	4	14
2009	Fall	CS657-Adv Networking	4	3

Development of New Courses

CS680, Spring 2007. This is a seminar course with emphasis on systems security, where students created their own network with Cisco routers and real services (mail, DNS, web, SSH, ftp) and staged attacks and defenses.

ADVISING:

STUDENT ADVISING/GRADUATE SUPERVISION

UNDERGRADUATE STUDENTS

Nick Diel (graduated)
David Kapp (graduated)
Kathrine Shubert (graduated)
Andrea Steiner

GRADUATE STUDENTS

Current Graduate Advisees:

Genevieve Bartlett, (PhD) - student is at the University of Southern California
Vamsi Kambhampati (PhD)
Steve DiBenedetto (PhD)
Kaustubh Gadkari (MS)
Mengran Xu (PhD)

Current Graduate Committee Membership:

4, Plan A

Graduate Committee memberships (for the past 5 years)

26 PhD (all at USC)
1 MS (at USC)

Graduate Degrees Completed Under My Supervision

Rishi Sinha 2006, PhD (USC student)
Xinming He, 2006 PhD (USC student)
Alefiya Hussain, 2005, PhD (USC student)
Adnan Mahmud, 2004, MS (USC student)
Emmanuil Laliotis, 2000, MS (USC student)

Descriptions of Mentoring Activities

Helped develop the NetSec Lab, with Prof. Massey. Supervised several undergraduates and one graduate student in network administration, web page development, machine configuration, etc.

CV SECTION 4: Evidence of Outreach/Service

COMMITTEES

Coffee with CSU, Coordinator, IsTec, 2008-9
Department Undergraduate Committee, 2008-9
Department Graduate Admissions Committee, 2007-8
Department Research Committee, 2006-7

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

Professional Memberships: ACM, IEEE.
TPC Co-chair, Global Internet, 2008.
Chair, Computer Communications Workshop, Fall 2008.
Treasurer, Sigcomm 2005.
Student Travel Awards committee member, Sigcomm 2004.
Co-chair, NOSSDAV 2003.
Panel Chair, ACM OpenSig 2002, Lexington, KY. Theme: "Extensible Networks."
Chair, Student Travel Awards, Sigcomm 2001.
Program Committee member, Global Internet 2010
Program Committee member, Networking 2010
Program Committee member, IMC 2009
Program Committee member, Sigcomm 2009
Program Committee member, Global Internet, 2007.
Program Committee member, Sigcomm 2007.
Program Committee member, Networking 2006.
Program Committee member, Infocom 2006.
Program Committee member, Comsware 2006.
Program Committee member, Networking 2005.
Program Committee member, Sigcomm 2004.
Program Committee member, Infocom 2004.
Program Committee member, NGC 2003.
Program Committee member, Infocom 2003.
Program Committee member, NGC 2002.
Program Committee member, NOSSDAV 2002.
Grant Proposal Reviewer: National Science Foundation. External reviewing and panel reviews. 2000 – present.
Conference and Journal Reviewer: Transactions on Computers, IEEE/ACM Transactions on Networking, Computer networks, ACM Sigcomm, ACM Sigmetrics, IEEE Infocom,

ICDCS, ICMCS, IZS, SPIE/ACM MMCN, NOSSDAV, IEEE RTTAS, HIPPARCH, LCN, IEEE Magazine, and more.

OTHER ACTIVITIES/ACCOMPLISHMENTS – SERVICE/OUTREACH

Paper Citations (as of September 2005. Sources: CiteSeer and Google Scholar)

A Framework for Classifying Denial of Service Attacks (2003): 16 and 53 citations.

An Error Control Scheme for Large-Scale Multicast Applications (1998): 81 and 158 citations.

Retransmission-Based Error Control for Continuous Media Applications (1996): 33 and 71 citations.

Contributed Software

LMS simulation software: contributed software module to ns. Available at <http://www.isi.edu/ns/>

PGM simulation software: contributed software module to ns. Available at <http://www.isi.edu/ns/>

Cossack: Coordinated Suppression of Simultaneous Attacks. Available at <http://www.isi.edu/cossack>

External Evaluations

The Cossack software was selected to undergo Red Team Evaluation at a DARPA testing facility in Arlington, VA. Oct 2002 – April 2003. DARPA selects only a handful of projects from each program for Red Team evaluation.