

Patrick Seeling

Central Michigan University
College of Science and Technology
Department of Computer Science
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EDUCATION

Arizona State University

Ph. D. in Electrical Engineering (GPA 4.0), August 2005
Thesis: The Rate Variability-Distortion (VD) Curve of Encoded Video
Advisor: Dr. Martin Reisslein

Berlin Institute of Technology, Germany

Diplom-Ingenieur in Industrial Engineering and Management, December 2002

ACADEMIC EXPERIENCE

Department of Computer Science

Central Michigan University
Assistant Professor (Tenure-track), 2011 – present

Department of Computing and New Media Technologies

University of Wisconsin-Stevens Point
Assistant Professor (Tenure-track), 2008 – 2011

Department of Electrical Engineering

Arizona State University
Associated Faculty, 2007

Department of Electrical Engineering

Arizona State University
Faculty Research Associate, 2005 – 2006

PUBLICATIONS

Overview

- Citation metrics computed with Harzing's Publish or Perish program freely available from <http://www.harzing.com/> based on Google Scholar data as of November 1st, 2011:
 - Total citations = 519 (52/year, 8.7/paper)
 - h -index = 12
 - g -index = 21
- 22 published articles in peer-reviewed journals
 - Networking research: 15
 - Computer-mediated and engineering education research: 7
 - IEEE Transactions and Journals: 7
 - IEEE Magazines: 4
- 25 published articles in peer-reviewed conference proceedings
- Selected journal rankings with articles published based on Article Impact (AI) factor and Eigenfactor (EF) values provided by <http://www.eigenfactor.org> as of November 1st, 2011:
 - IEEE Journal on Selected Areas in Communications: AI=2.18, EF=0.04 (95/95 percentile)
 - IEEE Transactions on Information Theory: AI=1.78, EF=0.08 (93/98 percentile)
 - IEEE Communications Magazine: AI=1.28, EF=0.02 (87/91 percentile)
 - IEEE/OSA Journal of Lightwave Technology: AI=0.91, EF=0.04 (77/95 percentile)
 - Learning and Instruction: AI=0.86, EF=0.003 (75/59 percentile)
 - IEEE Communications Letters: AI=0.66, EF=0.02 (64/90 percentile)
 - IEEE Transactions on Broadcasting: AI=0.49, EF=0.004 (51/61 percentile)
 - IEEE Transactions on Education: AI=0.21, EF=0.001 (23/63 percentile)

Refereed Archival Journal Papers

Complete Listing of Published Journal Articles

1. P. Seeling, M. Reisslein and B. Kulapala. Network Performance Evaluation with Frame Size and Quality Traces of Single-Layer and Two-Layer Video: A Tutorial. *IEEE Communications Surveys and Tutorials*, 6(3):58–78, Third Quarter 2004.
2. F. H.P. Fitzek, S. Rein, P. Seeling and M. Reisslein. RObust Header Compressions (ROHC) Performance for Multimedia Transmission over 3G/4G Wireless Networks. *Wireless Personal Communications (Kluwer/Springer)*, 32(1):23–41, January 2005.
3. P. Seeling, P. de Cuetos and M. Reisslein. Fine Granularity Scalable (FGS) Video: Implications for Streaming and a Trace-Based Evaluation Methodology. *IEEE Communications Magazine*, 43(4):138–142, April 2005.
4. J. Reisslein, P. Seeling and M. Reisslein. Video in Distance Education: ITFS vs. Web-Streaming – Evaluation of Student Attitudes. *The Internet and Higher Education (Elsevier)*, 8(1):25–44, First Quarter 2005.
5. P. de Cuetos, P. Seeling, M. Reisslein and K. W. Ross. Comparing the Streaming of FGS Encoded Video at Different Aggregation Levels: Frame, GoP, and Scene. *International Journal of Communication Systems (Wiley)*, 18(5):449–464, May 2005.
6. J. Reisslein, P. Seeling and M. Reisslein. Integrating Emerging Topics and Distance Learners through Online Team Design in a Communication Networks Course. *The Internet and Higher Education*, 8(2):145–160, Second Quarter 2005.
7. J. Reisslein, P. Seeling and M. Reisslein. Computer-Based Instruction on Multimedia Networking Fundamentals: Equational vs. Graphical Representation. *IEEE Transactions on Education*, 48(3):438–447, August 2005.
8. J. Reisslein, P. Seeling, R. Atkinson and M. Reisslein. Investigating the Presentation and Format of Instructional Prompts in an Electrical Circuit Analysis Computer-Based Learning Environment. *IEEE Transactions on Education*, 48(3):531–539, August 2005.
9. P. Seeling and M. Reisslein. Evaluating Multimedia Networking Mechanisms Using Video Traces. *IEEE Potentials*, 24(4):21–25, October/November 2005.
10. P. Seeling and M. Reisslein. The Rate Variability-Distortion (VD) Curve of Encoded Video and its Impact on Statistical Multiplexing. *IEEE Transactions on Broadcasting*, 51(4):473–492, December 2005.
11. J. Reisslein, R. K. Atkinson, P. Seeling and M. Reisslein. Encountering the Expertise Reversal Effect with a Computer-based Environment on Electrical Circuit Analysis. *Learning and Instruction*, 16(2):92–103, April 2006.
12. P. Seeling, M. Reisslein, T. Madsen and F. H.P. Fitzek. Performance Analysis of Header Compression Schemes in Heterogeneous Wireless Multi-Hop Networks. *Wireless Personal Communications (Springer)*, 38(2):203–232, July 2006.
13. P. Seeling, M. Reisslein and F. H.P. Fitzek. Offset Trace-Based Video Quality Evaluation after Network Transport. *Journal of Multimedia (JMM)*, 1(2):1–13, May 2006.
14. J. Reisslein, M. Reisslein and P. Seeling. Comparing Static Fading with Adaptive Fading to Independent Problem Solving: The Impact on the Achievement and Attitudes of High School Students Learning Electrical Circuit Analysis. *ASEE Journal of Engineering Education*, 95(3):217–226, July 2006.

15. M. Scheutzow, P. Seeling, M. Maier and M. Reisslein. Shortest Path Routing in Optical WDM Ring Networks under Multicast Traffic. *IEEE Communications Letters*, 10(7):564–566, July 2006.
16. M. Scheutzow, P. Seeling, M. Maier, and M. Reisslein. WDM Star Subnetwork Upgrade of Optical Ring Networks for Maximum Spatial Reuse under Multicast Traffic. *IEEE Journal on Selected Areas in Communications (JSAC)*, 25(4):55–67, April 2007.
17. M. Scheutzow, P. Seeling, M. Maier, and M. Reisslein. Multicasting in WDM Upgraded Resilient Packet Ring (RPR). *Journal of Optical Networking (JON)*, 6(5): 415–421, May 2007.
18. M. an der Heiden, M. Sortais, M. Scheutzow, M. Reisslein, P. Seeling, M. Herzog, and M. Maier. Multicast Capacity of Optical Packet Ring for Hotspot Traffic, *IEEE/OSA Journal of Lightwave Technology*, 25(9):2638–2652, September 2007.
19. M. Scheutzow, M. Reisslein, M. Maier, and P. Seeling. *Multicast Capacity of Packet-Switched Ring WDM Networks*. *IEEE Transactions on Information Theory*, 54(2):623–644, February 2008.
20. P. Seeling. Labs @ Home. *ACM inroads – The SIGCSE Bulletin*, 40(4), December 2008.
21. P. Seeling. Web conferencing Traffic – An Analysis using DimDim as Example. *International Journal of Computer Networks & Communications (IJCNC)*, 2(6): 1–11, November 2010.
22. P. Seeling and M. Reisslein. Video Trace Evaluation With H.264 Video Traces. *IEEE Communications Surveys & Tutorials*, pp. tbd., accepted for publication, 2011.

PUBLICATIONS

National Conference Proceedings Refereed Papers

Complete Listing of Published Conference Proceedings Refereed Papers

1. F. H.P. Fitzek, L. Badia, P. Seeling, J. G. Schulte and T. Henderson. Mobility and Stability Evaluation in Wireless Multi-Hop Networks Using Multiplayer Games. In *Proceedings of NetGames 2003*, pages 77–87, Redwood City, CA, May 2003.
2. P. Seeling, M. Reisslein, F. H.P. Fitzek and S. Hendrata. Video Quality Evaluation for Wireless Transmission with Robust Header Compression. In *Proceedings of the IEEE Fourth International Conference on Information, Communications & Signal Processing and Fourth IEEE Pacific-Rim Conference on Multimedia (ICICS-PCM)*, volume 3, pages 1346–1350, Singapore, December 2003.
3. F. H.P. Fitzek, P. Seeling, and M. Reisslein. Video and Audio Trace Files of Pre-Encoded Video Content for Network Performance Measurements. In *Proceedings of the IEEE Consumer Communications and Networking Conference (CCNC)*, volume 1, pages 245–250, Las Vegas, NV, January 2004.
4. F. H.P. Fitzek, P. Seeling, M. Reisslein, R. Rugin and M. Zorzi. A Visualization Tool for Ad Hoc Networks: ViTAN. In *Proceedings of the 7th International Symposium on Wireless Personal Multimedia Communications (WPMC)*, volume 1, pages 161–164, Abano Terme, Italy, September 2004.
5. B. Kulapala, P. Seeling and M. Reisslein. Comparison of Traffic and Quality Characteristics of Rate-Controlled Wavelet and DCT Video. In *Proceedings of the IEEE International Conference on Computer Communications and Networks (ICCCN)*, pages 247–252, Chicago, IL, October 2004.
6. P. Seeling and M. Reisslein Video Coding with Multiple Descriptors and Spatial Scalability for Device Diversity in Wireless Multi-hop Networks. In *Proceedings of the IEEE Consumer Communications and Networking Conference (CCNC)*, pages 278–283, Las Vegas, NV, January 2005.
7. M. Scheutzw, P. Seeling, M. Maier and M. Reisslein. Multicast Capacity of Packet-Switched Ring WDM Network. In *Proceedings of IEEE INFOCOM*, Vol. 1, pages 706–717, Miami, FL, March 2005.
8. M. Reisslein, J. Reisslein, P. Seeling and H.-S. Yang. A Course on Multimedia QoS Networking: Development and Evaluation of On-Campus Offering. In *Proceedings of IEEE Frontiers in Education Conference (FIE)*, pages S1J1–S1J6, Indianapolis, IN, October 2005.
9. M. Reisslein, J. Reisslein and P. Seeling. A Course on Multimedia QoS Networking: Transition to Hybrid Offering and Comparative Evaluation. In *Proceedings of the ASEE/IEEE Frontiers in Education Conference (FIE)*, pages S3H1–S3H6, Indianapolis, IN, October 2005.
10. J. Reisslein, P. Seeling and M. Reisslein. Work-In-Progress: Effectiveness of Worked Examples and Fading in Introductory Electrical Circuit Analysis for Learners of Different Ability Levels. In *Proceedings of the ASEE/IEEE Frontiers in Education Conference (FIE)*, pages S2H1–S2H2, Indianapolis, IN, October 2005.
11. P. Seeling and M. Reisslein. Video Offset Distortion Descriptors for Trace-Based Evaluation of Video Quality after Network Transport. In *Proceedings of the IEEE Int. Conference on Computer Communications and Networks (ICCCN)*, pages 375–380, San Diego, CA, October 2005. **Best Paper Award**
12. P. Seeling, M. Reisslein and F. H.P. Fitzek. Layered Video Coding Offset Traces for Trace-Based Evaluation of Video Quality after Network Transport. In *Proceedings of the IEEE Int. Consumer Communications and Networking Conference (CCNC)*, Vol. 1, pages 292–296, Las Vegas, NV, January 2006. **Paper won the 2nd place Best Paper Award of the conference.**
13. P. Seeling and M. Reisslein. Video Pricing for Wireless Networks. In *Proceedings of the IEEE Int. Consumer Communications and Networking Conference (CCNC)*, Vol. 2, pages 749–753, Las Vegas, NV, January 2006.

14. P. Seeling and M. Reisslein. Semantically Coupled Header Compression. In *Proceedings of First IEEE Workshop on Hot Topics in Web Systems and Technologies*, Boston, MA, Nov. 2006.
15. M. Reisslein, D. Tylavsky, B. Matar, P. Seeling, and J. Reisslein. Active and Cooperative Learning in a Freshman Digital Design Course: Impact on Persistence in Engineering and Student Motivational Orientation. In *Proceedings of the ASEE/IEEE Frontiers in Education Conference (FIE)*, Milwaukee, WI, October 2007.
16. P. Seeling. Scene Change Detection for Uncompressed Video. In *Proceedings of the Int. Joint Conferences on Computer, Information, and Systems Sciences, and Engineering (CISSE)*, December, 2008.
17. P. Seeling and J. B. Starren. Ad-Hoc Association of Pre-Determined ZigBee Devices. In *Proceedings of the Ubiquitous Mobile Healthcare Applications Workshop (MobiCare)*, Toronto, Canada, July 2009.
18. M. Hoppe¹ and P. Seeling. Security of Virtualized Applications: Microsoft App-V and VMware ThinApp. In *Proceedings of the Int. Joint Conferences on Computer, Information, and Systems Sciences, and Engineering (CISSE)*, December, 2009.
19. A. Pulipaka, P. Seeling, M. Reisslein, and L. J. Karam. Overview and Traffic Characterization of Coarse-Grain Quality Scalable (CGS) H.264 SVC Encoded Video. In *Proceedings of the IEEE Consumer Communications and Networking Conference (CCNC)*, Las Vegas, NV, January 2010.
20. P. Seeling. Work In Progress – Portable Student Labs Implementation. In *Proceedings of the ASEE/IEEE Frontiers in Education Conference (FIE)*, Washington, D.C., October 2010.
21. P. Seeling, F. H.P. Fitzek, Gergö Ertli, A. Pulipaka and M. Reisslein. Video Network Traffic and Quality Comparison of VP8 and H.264 SVC. *ACM Multimedia 2010 Workshop - Mobile Video Delivery (MoViD)* , Firenze, Italy, October 2010.
22. A. Sharma¹ and P. Seeling. Store-and-Forward in High Traffic Sensor Networks. *Computer Science On-line Conference 2011*, online, January 2011.
23. S. Haase¹ and P. Seeling. SOCKx – An Application Layer Network Switching Framework using SOCKSv5 Protocol Extensions. *IEEE International Conference on Electro/Information Technology (EIT)* , Mankato, MN, USA, May 2011.
24. P. Seeling. Network Performance Evaluation of Microsoft Office Communications Server 2007. *IEEE International Conference on Electro/Information Technology (EIT)* , Mankato, MN, USA, May 2011.
25. A. Ellertson and P. Seeling. Work in Progress - Using Mobile & Social Game Technology with Location-based Services for Building Learning Communities. *Proceedings of the ASEE/IEEE Frontiers in Education Conference (FIE)*, pages S4H-1–S4H-3, Rapid City, SD, USA, October 2011.

¹Undergraduate student co-author

PUBLICATIONS

National Conference Proceedings Reviewed Papers, Abstracts and Presentations

1. F. H.P. Fitzek, P. Seeling and M. Reisslein. Reference Models and Related Business Cases for ad-hoc Networks. In *Proceedings of the Wireless World Research Forum 6 (WWRP)*, London, UK, June 2002.
2. F. H.P. Fitzek, P. Seeling and M. Reisslein. Authentication and Security in IP Based Multi-hop Networks. In *Proceedings of Wireless World Research Forum 7 (WWRP)*, Vol. 1, Eindhoven, NL, December 2002.
3. F. H.P. Fitzek, P. Seeling and M. Reisslein. Link Level Design Issues for IP based Multi-hop Communication Systems. In *Proceedings of the Wireless World Research Forum 7 (WWRP)*, Vol. 1, Eindhoven, NL, December 2002.
4. M. Reisslein, P. Seeling, and L. Karam. H.264 Video Traces for Network Performance Evaluation. *IEEE Communication Society MMTC E-Letter*, 5(1): 33–35, January 2010.

PUBLICATIONS

Book Publishing (Books Authored, Books Edited, Book Chapters, Monographs)

1. F. H.P. Fitzek, S. Hendrata, P. Seeling and M. Reisslein. Wireless Internet, chapter Header Compression Schemes for Wireless Internet Access. *Electrical Engineering & Applied Signal Processing Series*. CRC Press, 2004.
2. F. H.P. Fitzek, P. Seeling and M. Reisslein. Wireless Internet, chapter Video Streaming in Wireless Internet. *Electrical Engineering & Applied Signal Processing Series*. CRC Press, 2004.
3. P. Seeling, Frank H.P. Fitzek, and M. Reisslein. Video Traces for Network Performance Evaluation. Springer, November 2006. ISBN: 978-1-4020-5565-2.
4. F. H.P. Fitzek, G. Schulte, E. Piri, J. Pinola, M. Katz, J. Huusko, K. Pentikousis, and P. Seeling. WiMAX Evolution: Emerging Technologies and Applications, chapter Robust Header Compression for WiMAX Femto Cells. Wiley, 2009. ISBN: 978-0-470-69680-4.

PUBLICATIONS

Other Publications

Tutorials

1. F. H.P. Fitzek, T. Madsen and P. Seeling. IP Header Compression Enabling High Quality Consumer-Oriented Communications Diversity. *IEEE Communication Society Tutorials*. Available at <http://www.comsoc.org/livepubs/tutorials/Seeling/index.html>

Software Tools

1. P. Seeling, F. H.P. Fitzek and M. Reisslein. Videometer. *IEEE Network*, 17(1):5, January 2003.
2. F. H.P. Fitzek, P. Seeling, M. Reisslein and M. Zorzi. ViTAN -Visualisation Tool for Ad-hoc Networks. *IEEE Network*, 17(4):9, July 2003.

Filed Patent Disclosures

1. P. Seeling and M. Reisslein. Video Coding with Multiple Descriptors and Spatial Scalability for Device Diversity. *ASU Case No. M5-013*.
2. P. Seeling. Entropy-based Scene Change Detection. *WiSys Reference No. T08030US*, June, 2008.
3. P. Seeling and J. Starren. Ad-Hoc Association of Pre-Determined ZigBee devices. *WiSys Reference No. R09001US*. September, 2008.

Invited Presentations

1. P. Seeling. Busy Bee – An Introduction to ZigBee and Its Potential for Home Monitoring. *Marshfield Clinic Research Foundation*, Marshfield, WI, April 2008.
2. P. Seeling. Wireless and Multimedia Research and Development at UW-Stevens Point. *Second Annual Wisconsin Science & Technology Symposium*, La-Crosse, WI, July 2009.

RESEARCH GRANTS

Sponsored Research – External Grants

Sponsor	Title	Investigator(s)	Dates	Amount
Wisc. Alumni Res. Found. (WARF)	Applied Research Prototype Development	PI: P. Seeling	6/1/2009 – 8/31/2009	\$9416
Univ. of Wisc. System Office of Federal Relations	Assistance for ARRA Grant Applications	PI: P. Seeling	6/1/2009 – 8/31/2009	\$3189

Sponsored Research – Internal Grants

Sponsor	Title	Investigator(s)	Dates	Amount
UWSP (CoLS)	Minigrant: Wireless Networks and Devices – Course Development	PI: P. Seeling	4/1/2008 – 6/30/2009	\$840
UWSP (Provost)	Curriculum Redesign Grant	PI: P. Seeling	4/9/2008	\$3000
UWSP (UPDC)	New Faculty Grant: Cooperation for Coexistence in the 2.4GHz ISM Band	PI: P. Seeling	4/30/2008 – 8/31/2009	\$1961
UWSP (CoLS)	Undergraduate Research Grant	PI: P. Seeling	6/1/2009 – 8/31/2009	\$2000
UWSP (CoLS)	Minigrant: USB Devices for Portable Labs	PI: P. Seeling	11/11/2009 –	\$600
UWSP (CoLS)	Curriculum Enhancement: Peer-led Mobile Learning Community Tool	Co-PI: A. Ellertson Co-PI: P. Seeling	10/10/2010 –	\$3401

RESEARCH GRANTS**Unfunded External Research Proposals**

Sponsor	Title	Investigator(s)	Dates	Amount
NSF (DRL)	Informal Science Education for Mature Learners: Hybrid Learning Modules for Use in Lifelong Learning Programs	PI: V. Waldron Co-PI: P. Seeling	1/1/2007 – 12/31/2009	\$565,978 share 25%
NSF (IIS)	CAREER Seeling	PI: P. Seeling	11/01/2008 – 10/30/2013	\$494,509
NIH Challenge	Usable Wireless Monitoring System	PI: P. Seeling	11/1/2009 – 10/31/2010	\$207,950
NSF (DUE)	Port-A-Lab: Portable Virtualized Computing Environment	PI: P. Seeling	1/1/2010 – 12/31/2011	\$139,316
NIH (AREA)	Wireless Sensor Network System for Patient Home Monitoring	PI: P. Seeling	7/1/2010 – 6/30/2011	\$282,500
NSF (IIS)	CAREER: Media Selection, Characteristics, and Delivery in Campus Networks	PI: P. Seeling	1/1/2010 – 12/31/2014	\$395,175
DARPA (CS-STEM)	Brewster Point	PI: R. Dollinger, Co-PI: A. Ellertson, Co-PI: P. Seeling	3rd Q 2010 – 4th Q 2011	\$1,945,409
NSF (DUE)	Evaluation of Scaffolding in Virtualized Environments	PI: P. Seeling	1/1/2011 – 12/31/2013	\$157,428

PROFESSIONAL AND SCIENTIFIC SERVICE

Scientific and Professional Society Memberships

- Association for Computing Machinery (ACM) Senior Member, 2003 – present
- Institute of Electrical and Electronics Engineers (IEEE) Senior Member, 2003 – present
- IEEE Multimedia Communications Technical Committee (IEEE MMTC) Member, 2008 – present
- IEEE Technical Committee on Computer Communications (IEEE TCCC) web coordinator, 2010 – present
- Institute for Computer Sciences, Social Informatics and Telecommunications Engineering (ICST), 2011 – present
- European Alliance for Innovation (EAI), 2011 – present

Journal Activities

Journal Editing

- Associated Editor for Advances in Network and Communications (HumanPub): 2010 – present
- Associated Editor for International Journal on Trust Management in Computing and Communications (IJTMCC) (InderScience, UK): 2011 - present

Journal Referee

- IEEE Transactions on Broadcasting: 2005
- IEEE Transactions on Signal Processing: 2009
- Computer Communications (Elsevier): 2009
- Wireless Personal Communications (Springer)
- Advances in Multimedia (Hindawi): 2010
- Transactions on Signal Processing Journal (WSEAS): 2010
- Journal of Digital Information Management (DIRF): 2010
- IEEE Communication Letters: 2010

Conference Activities

Chairing and Co-Chairing

- International Conference on Advances in Computing and Communications (AICC): 2011 Tutorial Co-Chair
- Fourth International Conference on the Applications of Digital Information and Web Technologies (ICADIWT): 2011 Program Co-Chair
- ASEE/IEEE Frontiers in Education Conference (FIE) 2011 Session Chair

Technical/Program Committee Member

- IEEE Consumer Communications and Networking Conference (CCNC): 2006 – 2008
- IEEE Cognitive and Cooperative Wireless Networks (CoCoNet): 2008 – 2011
- 4th International ICST Mobile Multimedia Communications Conference (ICST Mobimedia): 2008
- International Joint Conferences on Computer, Information, and Systems Sciences, and Engineering (CISSE): 2008
- European Wireless (EW): 2009
- International Conference on Advances in Computing and Communications (AICC): 2011
- IARIA International Conferences on Advances in Multimedia (MMEDIA): 2011
- IEEE International Conference on Multimedia & Expo (ICME): 2011
- IEEE Global Communications Conference (GLOBECOM) : 2011

Reviewer

- IEEE International Conference on Electro/Information Technology (EIT): 2011
- ASEE/IEEE Frontiers in Education Conference (FIE): 2011
- IEEE INFOCOM: 2012

CENTRAL MICHIGAN UNIVERSITY SERVICE

Department of Computer Science

- CMU Science engineering and Technology (SET), Summer 2011
- CMU and You Day, Fall 2011
- Residence Hall Advisor: Fall 2011 – present

College of Science and Technology

- Associate Dean Search Committee

UNIVERSITY OF WISCONSIN-STEVENS POINT SERVICE

University

- Member, Review Committee for the Interim Dean of the College of Letters and Science, 2008
- Member, University Affairs Committee, 2009 – 2011

College of Letters and Sciences

- Member, Dean's Advisory Committee of the College of Letters & Science, 2008 – 2009
- Member, Review Committee for Justus & Barbara Paul Sabbatical Grant, 2009

Department of Computing and New Media Technologies

- Member, Skyward Scholarship Review Committee, 2008
- Member, Faculty Search and Screen Committee, 2008, 2009
- Member, Marketing Committee for the Department, 2008 – 2010
- Chair, Computer Information Systems Curriculum Committee, 2008 – 2009
- Member, Department Curriculum Committee, 2009 – 2011
- Student Exchange Coordinator with the Otto-von-Guericke University, Magdeburg, Germany, 2009 – 2011

EVALUATION OF INSTRUCTION

Student Evaluations

All student evaluations are on a 5 point Likert scale ranging from 1.00 (highest, strongly agree) to 5.00 (lowest, strongly disagree). The provided evaluation results are for the course and department median in student answers for the question ‘Overall, the instructor taught this course effectively’. Results presented from Winterim 2008 through Spring 2011 are for courses offered in the Department of Computing and New Media Technologies at the University of Wisconsin-Stevens Point. Results presented from Fall 2011 onwards are for courses taught in the Department of Computer Science at Central Michigan University.

University of Wisconsin-Stevens Point

Year and Term	Course	Title and Section	Students	Median, Comp.
2008 Winterim	CIS330	Computer and Network Architecture	18	1.8, 2.1
2008 Spring	CIS330	Computer and Network Architecture		
		Section 1	15	1.5, 1.7
		Section 2	15	1.1, 1.7
		Section 3	15	1.4, 1.7
	Section 4	13	1.2, 1.7	
	CIS360	Data Communication and Networks	18	1.3, 1.7
2008 Fall	CIS330	Computer and Network Architecture		
		Section 1	13	1.3, 1.6
		Section 2	14	1.1, 1.6
	Section 3	9	1.6, 1.6	
	CIS361	Information and Network Security	11	1.0, 1.6
CIS462	Web Server Administration	8	1.0, 1.6	
2009 Winterim	CIS346	Wireless Networks and Devices	11	1.1, 1.4
2009 Spring	CIS346	Wireless Networks and Devices	14	1.1, 1.6
	CIS360	Data Communication and Networks	24	1.4, 1.6
	CIS462	Secure Server Administration	6	1.3, 1.6
2009 Fall	CIS360	Data Communication and Networks	16	1.5, 1.5
	CIS361	Information and Network Security	10	1.2, 1.5
	CIS462	Secure Server Administration	11	1.4, 1.5
2010 Spring	CIS360	Data Communication and Networks	5	1.0, 1.5
	CIS460	Advanced Topics in Networking	13	1.2, 1.5
	CIS464	Wireless Networking and Devices	9	1.4, 1.5
2010 Fall	CIS225	Data Communication and Networks	14	2.3, 1.5
	CIS361	Information and Network Security	5	1.3, 1.5
	CIS462	Secure Server Administration	9	2.5, 1.5
2011 Spring	CIS225	Data Communication and Networks	18	
	CIS460	Advanced Topics in Networking	7	
	CIS464	Wireless Networking and Devices	3	

Central Michigan University

Year and Term	Course	Title and Section	Students	Median, Comp.
2011 Fall	CPS282	Introduction to Multimedia Design	6	
2012 Spring	CPS181	Introduction to Data Structures		
	CPS396M	Mobile Computing: Android		

Total number of students taught: 296**Weighted average for student evaluation of instruction: 1.4**

EVALUATION OF INSTRUCTION

Courses and Course Material Developed

Computer-based Instructional Module on Principles of Multimedia Networking, Arizona State University

Co-developed and assessed a computer-based instructional module that (i) introduces senior level college students to the principles of multimedia networking in the Internet, and (ii) has been quantitatively demonstrated to be effective in teaching the basic principles of multimedia networking and to increase the motivation for further study in multimedia networking.

Computer-based Instructional Module on Principles of Electrical Circuit Analysis for Middle and High School Students, Arizona State University

Co-developed and assessed a computer-based instructional module that (i) introduces middle and high school students without any prior content specific knowledge to the principles of electrical circuit analysis, and (ii) has been quantitatively demonstrated to be effective in teaching the basic principles of circuit analysis and to increase motivation for further study in electrical engineering.

CIS346, CIS464: Wireless Networks and Devices, University of Wisconsin-Stevens Point

Developed an undergraduate course covering wireless network technologies including sensor networks, personal area networks, wide area networks, and cellular networks. The course provides additional introduction of mobility concepts and mobile device characteristics as well as programming introductions to Windows Mobile, Java ME and Android. As part of the course, several additional laboratory-based hands-on modules covering the different wireless technologies were developed.

CIS462: Server Administration, University of Wisconsin-Stevens Point

Redesigned an undergraduate course covering previously two courses in server administration for Linux and Windows operating systems and web server administration. All material from the previously two courses were re-developed into a hands-on course that is based on virtualization technologies and additionally geared towards distance education students. Using a scenario-based approach following the needs of a small company, topics covered include an introduction to Linux system administration and deployment of network services such as DHCP, DNS, SMTP, SSH, HTTP, and HTTPS.

CIS460: Advanced Topics in Networking, University of Wisconsin-Stevens Point

Developed a new undergraduate course covering advanced topics in networking, such as multimedia and overlay networking. In addition, students are introduced to standards documentations and peer-reviewed scientific publications. The latter two course topics are commonly not part of traditional coursework, yet important for the future professional development of students in business and academic careers alike.

CPS396M: Mobile Computing: Android, Central Michigan University

Course development for an Android OS course that combines introduction to the OS, mobile application development, and integration across different devices, such as phone, tablet and TV as well as other external hardware. Currently in development.

EVALUATION OF INSTRUCTION

Undergraduate Capstone Projects Supervised

Year and Term	Course No.	Title	Student(s)
2009 Fall	CIS480	Bootable Virtual Environments with Server Connectivity	J. Nugent, F. Passineau
2010 Spring	CIS480	DimDim Web Conferencing Traffic Analysis	W. Gao, R. Korth, J. Yuan
2010 Fall	CIS480	Evaluation of Private Ubuntu Enterprise Clouds for Virtual Laboratories	B. Schreiber, C. Redmond

Undergraduate Student Projects Supervised

Year and Term	Course No.	Title	Student(s)
2008 Fall	CIS499	Connectivity for Windows Server 2008 (3)	R. Stieber
2009 Spring	CIS499	Bluetooth Media Streaming (2)	D. Briske
2009 Fall	CIS399	Sun SPOT Heavy Data Streaming (3)	A. Sharma
2010 Fall	CIS499	Intelligent Network Selection Using User Trends (4)	A. Sharma
2011 Spring	CIS499	Server Virtualization (3) Mobile Phones and Lego Mindstorms (4) Mobile Phones and Lego Mindstorms (1) GPU Based Packet Compression (1) WWSP Mobile Media Streaming (3)	D. Geisendorfer M. Ryskiewicz M. Burdick A. Sharma A. Quaschnick

STUDENT THESES AND DISSERTATIONS ADVISED

Bachelor and Masters Theses Awarded/Advised

Student	Degree	Project Title	Year and Term
Michael Hoppe ¹	Diplom	Process and Analysis of Application Virtualization Distribution	Spring 2009
Steffen Haase ¹	B.S.	Cooperation of Wireless Networks	Fall 2009
Rohan Gupta ²	M.S.	Trace Based Traffic and Quality Evaluation of H.264/MPEG-4 Part-10 Scalable Video Coding (SVC) Extended Medium Grain Scalable (MGS) Video Streams	Fall 2009
Venkata Sai Akshay Pulipaka ²	M.S.	Traffic and Quality Characterization of Coarse-Grain Quality Scalable (CGS) H.264 SVC Encoded Video	Fall 2009
Shyamprasad Chikkerur ²	M.S.	Traffic and Objective Video Quality Characteristics of H.264 SVC Single-Layer Encoded High-Definition Videos	Fall 2009
Sushmith Hiremath ²	M.S.	H.264 CGS HD Video Characteristics	Fall 2010
Hari Sundararaman	M.S.	Error Resilient H.264/SVC Video Transmission over Wireless Networks	Spring 2011

Current Graduate Projects in Progress

Student	Degree	Project Title	Exp. Grad.
Venkata Sai Akshay Pulipaka ²	Ph.D.	H.264 SVC Encoded Video in Access Networks	2011

¹Degree awarded under a dual degree program between the Department of Computing and New Media Technologies, University of Wisconsin-Stevens Point and the Department of Computer Science, Otto-von-Guericke University Magdeburg, Germany.

²Student advising performed under a consulting agreement with the Department of Electrical Engineering, Arizona State University, Tempe, Arizona.