

Patrick Seeling

Associate Professor
Department of Computer Science
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Tenure/Tenure Track Appointments

2011–

Associate Professor (tenured), Department of Computer Science, Central Michigan University, Mount Pleasant, MI, USA, August 2015 – present.
Assistant Professor (tenure-track), July 2011 – August 2015.

2008–2011

Assistant Professor (tenure-track), Dept. of Computing and New Media Technologies, University of Wisconsin–Stevens Point, Stevens Point, WI, USA, January 2008 – June 2011.

Education

2003–2005

Ph.D., *Electrical Engineering*, Arizona State University, Tempe, AZ, USA, January 2003 – August 2005.

Thesis, *The Rate Variability-Distortion (VD) Curve of Encoded Video*, Advisor: Dr. Martin Reisslein.

1996–2002

Dipl.-Ing., *Industrial Engineering and Management*, Technische Universität Berlin, Germany, September 1996 – December 2002.

Thesis, *Mobile Business-to-Business in Implementation, Diffusion, and Development (transl.)*, Advisor: Dr. Marian Scherz.

Highlights

- Grants and Contracts Total amount of obtained external funding from the *National Science Foundation* \$267,571, from other sponsors \$16,505. Total amount of obtained internal funding: \$49,202.
- Publications 1724 citations in Google Scholar (as of 01/01/2018) for 41 peer-reviewed archival journal articles, 61 peer-reviewed conference proceedings papers, 1 book, 4 book chapters, and 6 invention disclosures, in addition to other publications.
- Awards College of Science and Engineering Sabbatical Fellowship AY 2017–2018.* SUGI-FWE-Nexus Workshop Participant Stipend, March 2017, Boulder, CO. GENI-NICE Workshop Participant Stipend, October 2017, Toronto, Ontario, Canada.
- Instruction 962 students instructed in class with 'overall instructor effectiveness' weighted average of 3.32 / 4.00.

* Not accepted due to personal reasons.

Grants and Contracts

Sponsored Research – Funded External Grants

NSF (IUSE) 2016 Creating Practical Active Learning Stations to Transform and Improve Existing Learning Environments for Computer Science Students.
 PI: J. Eickholt, Co-PIs: P. Seeling, M. Johnson.
 Total amount: \$267,571, dates: 8/1/2016–7/31/2019.

	Sponsor	Title	Investigator(s)	Dates	Amount
Other External Funding	Amazon, Inc. Education Res.	Evaluation of Web Page Object Expiration Settings	PI: P. Seeling	8/1/2015– 7/31/2016	\$3,900
	Univ. of Wisc. System Office of Federal Relations	Assistance for ARRA Grant Applications	PI: P. Seeling	6/1/2009– 8/31/2009	\$3,189
	Wisc. Alumni Res. Found. (WARF)	Applied Research Prototype Development	PI: P. Seeling	6/1/2009– 8/31/2009	\$9,416

Sponsored Research – Funded Internal Grants

	Sponsor	Title	Investigator(s)	Dates	Amount
Internal Funding	ORGS (FRCE-B)	Quantified Qualities of Experience for Mixed Reality Environments	PI: P. Seeling	10/20/2015– 10/19/2016	\$7,888
	ORSP (FRCE-PD)	Paper presentation at IEEE CCNC 2015	PI: P. Seeling	12/2014	\$1,000
	ORSP (FRCE-PD)	Poster presentation at ACM MobiHoc conference	PI: P. Seeling	6/2012	\$1,000
	ORSP (EC)	Investigation of Mobile Power Saving Potentials using Mobile SockX Proxy	PI: P. Seeling	7/1/2012– 6/30/2014	\$32,000
	ORSP (FRCE-R)	Mobile Video Traces	PI: P. Seeling	4/1/2012– 9/30/2012	\$3,400
	UWSP (CoLS)	Curriculum Enhancement: Peer-led Mobile Learning Commu- nity Tool	Co-PI: A. Ellertson Co-PI: P. Seeling	10/10/2010–	\$3,401
	UWSP (CoLS)	Minigrant: USB Devices for Portable Labs	PI: P. Seeling	11/11/2009–	\$600
	UWSP (CoLS)	Undergraduate Research Grant	PI: P. Seeling	6/1/2009– 8/31/2009	\$2,000
	UWSP (UPDC)	New Faculty Grant: Cooperation for Coexistence in the 2.4GHz ISM Band	PI: P. Seeling	4/30/2008– 8/31/2009	\$1,961
	UWSP (Provost)	Curriculum Redesign Grant	PI: P. Seeling	4/9/2008	\$3,000
	UWSP (CoLS)	Minigrant: Wireless Networks and Devices – Course Development	PI: P. Seeling	4/1/2008– 6/30/2009	\$840

Publications

Publication Highlights

Citation Metrics Citation metrics computed with Harzing's Publish or Perish program freely available from <http://www.harzing.com/> as of January 1st, 2018 from Google Scholar source:

- Total citations = 1613
- *h*-index = 19
- *g*-index = 37

Citation metrics computed with Harzing's Publish or Perish program as of January 1st, 2018 from Microsoft Academic source:

- Total citations = 1636
- *h*-index = 16
- *g*-index = 38

Citation metrics obtained directly through Google Scholar from <http://scholar.google.com/citations?user=BUe1aRgAAAAJ&hl=en> as of January 1st, 2018:

- Total citations = 1724
- *h*-index = 19
- *i10*-index = 38

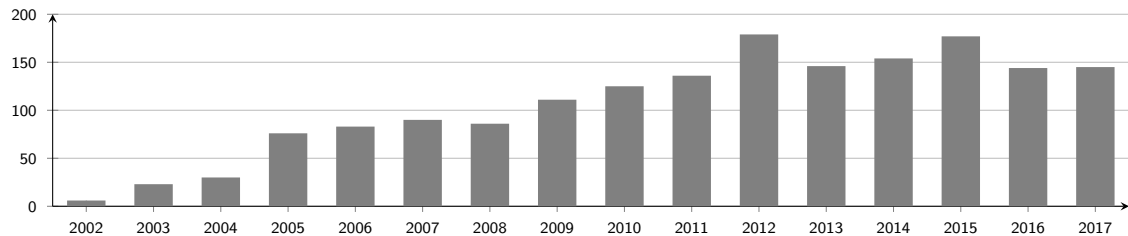
Citation metrics obtained directly from Clarivate's Web of Science as of January 1st, 2018:

- Total Publications = 57
- Total citations = 412
- Citing articles = 383
- *h*-index = 7

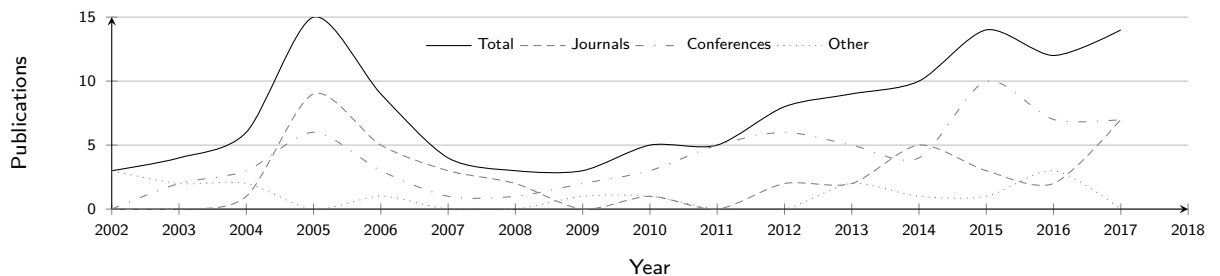
ResearchGate My ResearchGate score as of January 1st, 2018 is 28.89 (85 percentile globally) with an *h*-index of 17, 4712 reads and 1331 citations.

ResearchID My ResearcherID is M-3697-2013, see <http://www.researcherid.com/rid/M-3697-2013>, and
and Orcid ID my Orcid ID is 0000-0003-2770-0675, see <https://orcid.org/0000-0003-2770-0675>

Citation Timeline



Publishing Timeline



Journal Publications	41 published or accepted/in print articles in peer-reviewed archival journals.
Conference Publications	65 accepted or published contributions in peer-reviewed conference proceedings.
Other Publications	<ul style="list-style-type: none"> ○ One book covering video traces ○ Four book chapters covering video, RObust Header Compression (ROHC), and mobile clouds ○ One IEEE Communications Society tutorial ○ Six invention disclosures ○ Two demonstrations with undergraduate contributors from Central Michigan University ○ Two software tools in IEEE Network magazine
Commercial	Six invention disclosures, one resulting in a provisional patent, not followed due to switch of institutions.
Journal Rankings	<p>Selected journal rankings with articles published. Presented rankings are the Thompson Reuters Journal Citation Report's Impact factor (I) and 5-Year Impact factor (5I), the University of Washington's Eigenfactor (E) and Article Influence (AI) scores, as well as the SCImago Journal & Country Rank SJR score (SJR) and Quartile (Q). Rankings are current as of September 1st, 2013.</p> <ul style="list-style-type: none"> ○ IEEE Communications Surveys and Tutorials I=4.818, 5I=6.348, E= 0.006, AI=2.492, SJR=5,903, Q1 ○ IEEE Transactions on Broadcasting I=2.087, 5I=2.027, E=0.005, AI=0.757, SJR=1,950, Q1 ○ IEEE Transactions on Education I=0.950, 5I=1.177, E=0.002, AI=0.277, SJR=0,672, Q2 ○ IEEE Journal on Selected Areas in Communications (JSAC) I=3.121, 5I=4.395, E=0.033, AI=2.493, SJR=4,166, Q1 ○ IEEE Transactions on Information Theory I=2.621, 5I=3.069, E=0.056, AI=1.375, SJR=4,131, Q1 ○ IEEE Communications Magazine I=3.661, 5I=3.797, E=0.027, AI=1.672, SJR=4,919, Q1 ○ IEEE/OSA Journal of Lightwave Technology I=2.555, 5I=2.319, E=0.035, AI=0.828, SJR=1,714, Q1 ○ IEEE Communications Letters I=1.160, 5I=1.160, E=0.017, AI=0.549, SJR=1,371, Q1 ○ Wireless Personal Communications I=0.428, 5I=0.497, E=0.002, AI=0.142, SJR=0,394, Q3 ○ International Journal of Ad Hoc and Ubiquitous Computing (Inderscience) I=0.511, 5I=0.539, E=0.001, AI=0.149, SQJR=0,334, Q3 ○ The Scientific World Journal (Hindawi) I=1.730, 5I=1.603, E=0.007, AI=0.427, SQJR=0,506, Q3
Comparative Impact Factors	The median impact factor of the Thomson Reuters Journal Citation Report in 2014 is 1.05 for <i>Telecommunications</i> and 0.97 for <i>Computer Science Information Systems</i> .

Publications

Student co-authors are underlined.

Refereed Archival Journal Papers under Review

1. B. Bauman and P. Seeling. Towards Predictions of the Image Quality of Experience for Augmented Reality Scenarios. *IEEE Transactions on Broadcasting*, Submitted, May 2017. Resubmitted, December 2017

Published Refereed Archival Journal Papers

41. P. Seeling. Augmented Reality Device Operator Cognitive Strain Determination and Prediction. *AIMS Electronic and Electrical Engineering* 1(1): 74-84, December 2017.
40. J. Eickholt, P. Seeling, and M. Johnson. Supporting active learning in computer science through technology and community. *J. Comput. Sci. Coll.*, 33(1):39-40, October 2017.
39. P. Seeling. Image Quality in Augmented Binocular Vision: QoE Approximations with QoS and EEG. *Periodica Polytechnica Electrical Engineering and Computer Science*, 61(4):327-336, September 2017.
38. M. Tömösköz, P. Seeling, P. Ekler, and F. H.P. Fitzek. Prediction of RoHCv1 and RoHCv2 Compressor Utilities for VoIP. *Acta Cybernetica*, 23(2):737-756, 2017.
37. B. Bauman and P. Seeling. Visual Interface Evaluation for Wearables Datasets: Predicting the Subjective Augmented Vision Image QoE and QoS. *Future Internet* 9(3):40, July 2017.
36. M. Tömösköz, P. Seeling, P. Ekler, and F. H.P. Fitzek. Performance Evaluation and Implementation of IP and Robust Header Compression Schemes for TCP and UDP Traffic in Static and Dynamic Wireless Contexts. *Computer Science and Information Systems*, 14(2): 283-308, June 2017.
35. M. Tömösköz, P. Seeling, P. Ekler, and F. H.P. Fitzek. Performance Evaluation of Network Header Compression Schemes for UDP, RTP and TCP. *Periodica Polytechnica Electrical Engineering and Computer Science*, 60(3): 151–162, August 2016.
34. T. A. Johnson and P. Seeling. Landing on the Mobile Web: From Browsing to Long-Term Modeling. *IEEE Communications Magazine*, 54(2):146–151, February, 2016.
33. P. Seeling. Towards Quality of Experience Determination for Video in Augmented Binocular Vision Scenarios. *EURASIP Signal Processing: Image Communication (Elsevier)*, 33(0):41–50, April 2015.
32. J. A. Pulcifer–Stump, P. Seeling, J. L. Koch, S. Kettler, and T. Kaya. From Pit to Long Lie: A Fall-detection Algorithm for Smart Phones. *International Journal of Engineering Research & Innovation (IJERI)*, 15(2):23–30, March 2015.
31. J. Lee and P. Seeling. Capacity Level Modeling of Mobile Device Bandwidth Requirements Employing High Utilization Mobile Applications. *Computer Communications (Elsevier)*, 57(0):64–72, February 2015.
30. P. Seeling and M. Reisslein. I. Want. Pixels. (Entering the Age of 4k). *IEEE Potentials*, 33(6):27–30, November 2014.
29. T. A. Johnson and P. Seeling. Desktop and Mobile Web Page Comparison: Characteristics, Trends, and Implications. *IEEE Communications Magazine*, 52(9):144–151, September 2014.
28. P. Seeling. An Overview of Energy Savings through Forwarding Server on Mobile Devices. *International Journal of Ad Hoc and Ubiquitous Computing*, 16(4):260–267, September 2014.
27. M. Katz, D. E. Lucani, F. H.P. Fitzek, and P. Seeling. Sharing Resources Locally and Widely: Mobile Clouds as the Building Blocks of the Shareconomy. *IEEE Vehicular Technology Magazine*, 9(3):63–71, September 2014.

26. P. Seeling and M. Reisslein. Video Traffic Characteristics of Modern Encoding Standards: H.264/AVC with SVC and MVC Extensions and H.265/HEVC, *The Scientific World Journal*, Vol. 2014 (2014), Article ID 189481, pp. 1-16, 2014.
25. R. J. Haddad, M. P. McGarry, and P. Seeling. Video Frame Size Forecasting. *IEEE Communications Surveys & Tutorials*, 15(4): 1803–1818, 4th Quarter 2013.
24. A. Pulipaka, P. Seeling, M. Reisslein, and L. J. Karam. Traffic and Statistical Multiplexing Characterization of 3D Video Representation Formats. *IEEE Transactions on Broadcasting*, 59(2):382–389, April 2013.
23. R. Gupta, A. Pulipaka, P. Seeling, L. J. Karam, and M. Reisslein. H.264 Coarse Grain Scalable (CGS) and Medium Grain Scalable (MGS) Encoded Video: A Trace Based Traffic and Quality Evaluation. *IEEE Transactions on Broadcasting*, 58(3):428–439, September 2012.
22. P. Seeling and M. Reisslein. Video Transport Evaluation With H.264 Video Traces. *IEEE Communications Surveys & Tutorials*, 14(4):1142–1165, Fourth Quarter 2012.
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.
20. P. Seeling. Labs @ Home. *ACM inroads – The SIGCSE Bulletin*, 40(4), December 2008.
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.
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.
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.
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.
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.
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.
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.
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.
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.
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.
9. P. Seeling and M. Reisslein. Evaluating Multimedia Networking Mechanisms Using Video Traces. *IEEE Potentials*, 24(4):21–25, October/November 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.
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.
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.
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.
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.
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.
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.
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.

Publications

Student co-authors are underlined.

Published Refereed Conference Proceedings Papers

65. P. Seeling and J. Eickholt. Levels of Active Learning in Programming Skill Acquisition: From Lecture to Active Learning Rooms. In *Proc. of 47th ASEE/IEEE Frontiers in Education Conference (FIE)*, Indianapolis, IN, USA, October 2017.
64. J. Eickholt, J. Roush, P. Seeling, T. Vedantham, and M. Johnson. Supporting Active Learning through Commodity and Open Source Solutions. In *Proc. of 47th ASEE/IEEE Frontiers in Education Conference (FIE)*, Indianapolis, IN, USA, October 2017.
63. M. Tömösköz, P. Seeling, P. Ekler, and F. H.P. Fitzek. Robust Header Compression Version 2 Power Consumption on Android Devices via Tunnelling. In *Proc. of IEEE ICC-Workshops*.
62. M. Tömösköz, P. Seeling, P. Ekler, and F. H.P. Fitzek. Applying Robust Header Compression version 2 for UDP and RTP Broadcasting with Field Constraints. In *Proc. of IEEE VTC2017-Spring*, Sydney, Australia.
61. A. Knox and P. Seeling. Mobile Web Page Characteristics: Delivery and Stability Considerations. In *Proc. of IEEE Consumer Communications and Networking Conference (CCNC)*, Las Vegas, NV, USA, January 2017.
60. H. Salman and P. Seeling. Resource Utilization for Access to Web-Based Services: Browser versus Mobile Application. In *Proc. of IEEE Consumer Communications and Networking Conference (CCNC)*, Las Vegas, NV, USA, January 2017.
59. B. Bauman and P. Seeling. Towards Still Image Experience Predictions in Augmented Vision Settings. In *Proc. of IEEE Consumer Communications and Networking Conference (CCNC)*, Las Vegas, NV, USA, January 2017.
58. M. Tömösköz, P. Seeling, P. Ekler, and F. H.P. Fitzek. Regression Model Building and Efficiency Prediction of RoHCv2 Compressor Implementations for VoIP. In *Proc. of IEEE GLOBECOM*, Washington, D.C., USA, December 2016.
57. P. Seeling. Evolving an Introductory Programming Course: Impacts of Student Self-Empowerment, Guided Hands-On Times, and Self-Directed Training. In *Proc. of 46th ASEE/IEEE Frontiers in Education Conference (FIE)*, Eerie, PA USA, October 2016.
56. P. Seeling. Switching to Blend-Ed: Effects of Replacing the Textbook with the Browser in an Introductory Computer Programming Course. In *Proc. of 46th ASEE/IEEE Frontiers in Education Conference (FIE)*, Eerie, PA USA, October 2016.
55. M. Tömösköz, P. Seeling, P. Ekler, and F. H.P. Fitzek. Efficiency Gain for RoHC Compressor Implementations with Dynamic Configuration. In *Proc. of IEEE VTC-Fall Workshop on Cellular Internet of Things - Emerging Trends and Enabling Technologies*, Montreal, Quebec, Canada, September 2016.
54. M. Tömösköz, P. Seeling, P. Ekler, and F. H.P. Fitzek. Performance Prediction of Robust Header Compression version 2 for RTP Audio Streaming Using Linear Regression. In *Proc. of European Wireless Conference (EW)*, Oulu, Finland, May 2016.
53. S. Mead, N. Veeramachaneni, and P. Seeling. An Overview of Mobile Device Network Activities: Characteristics of Heterogeneous Network Interfaces (Poster). In *Proc. of IEEE Consumer Communications and Networking Conference (CCNC)*, pages 312–313, Las Vegas, NV, USA, January 2016.

52. P. Seeling. Visual User Experience Difference: Image Compression Impacts on the Quality of Experience in Augmented Binocular Vision. In *Proc. of IEEE Consumer Communications and Networking Conference (CCNC)*, pages , Las Vegas, NV, USA, pages 931–936, January 2016.
51. M. P. McGarry and P. Seeling. Lecture, Narrated Slides, or First Person View? Impact of Presentation on Learning Outcomes. In *Proc. of 45th ASEE/IEEE Frontiers in Education Conference (FIE)*, El Paso, TX, USA, October 2015.
50. P. Seeling. Assessing Student Views of Traditional, Free, and Interactive Modifications for an Introductory Networking Course. In *Proc. of 45th ASEE/IEEE Frontiers in Education Conference (FIE)*, El Paso, TX, USA, October 2015.
49. P. Seeling. Augmented Lectures: A Liquid Feedback System for the Traditional and Blended Classroom. In *Proc. of 16th ACM Annual Conference on Information Technology Education (SIGITE)*, Chicago, IL, USA, September 2015.
48. M. Tömösköz, P. Seeling, P. Ekler, and F. H.P. Fitzek. Performance Evaluation and Implementation of IP and Robust Header Compression Schemes for TCP and UDP Traffic in the Wireless Context. In *Proc. of Eastern European Regional Conference on the Engineering of Computer Based Systems (ECBS-EERC)*, Brno, Czech Republic, August 2015. **Paper won the conference Best Paper Award.**
47. P. Seeling. Assessing the Quality of Experience in Augmented Vision: Towards a Unified Evaluation Framework. In *Proceedings of IEEE ICC Workshop on Quality of Experience-based Management for Future Internet Applications and Services (QoE-FI)*, London, UK, June 2015.
46. T. Johnson and P. Seeling. Browsing the Mobile Web: Device, Small Cell, and Distributed Mobile Caches. In *Proceedings of IEEE ICC Workshop on Cooperative and Cognitive Networks (Co-CoNet)*, London, UK, June 2015.
45. T. Johnson and P. Seeling. Landing Page Characteristics Model for Mobile Web Performance Evaluations on Object and Page Levels. In *Proceedings of the IEEE International Conference on Communications (ICC)*, London, UK, June 2015.
44. M. Tömösköz, F. H.P. Fitzek, D. E. Lucani, M. V. Pedersen, P. Seeling, and P. Ekler. On the Packet Delay Characteristics for Serially-Connected Links using Random Linear Network Coding with and without Recoding. *European Wireless*, Budapest, Hungary, May 2015.
43. Y. Alghamdi and P. Seeling. Activity-Based Cloud Sending: Push Services for User Device Multiplicity. *IEEE Consumer Communications and Networking Conference (CCNC)*, Las Vegas, NV, USA, January 2015.
42. P. Seeling. Network Traffic Characteristics of Proxied Wearable Devices: A Day with Google Glass. *IEEE Consumer Communications and Networking Conference (CCNC)*, Las Vegas, NV, USA, January 2015.
41. T. Johnson and P. Seeling. Web Cache Object Forwarding From Desktop to Mobile for Energy Consumption Optimizations. In *Proceedings of the IEEE Online Conference on Green Communications (OnlineGreenComm)*, Online, November 2014.
40. M. Tömösköz, F. H.P. Fitzek, D. E. Lucani, M. V. Pedersen, and P. Seeling. On the Delay Characteristics for Point-to-Point links using Random Linear Network Coding with On-the-fly Coding Capabilities. In *Proceedings of European Wireless*, Barcelona, Spain, May 2014.
39. T. Johnson and P. Seeling. Power Consumption Overhead for Proxy Services on Mobile Device Platforms. In *Proceedings of the IEEE Consumer Communications and Networking Conference (CCNC)*, Las Vegas, NV, January 2014. (Acceptance rate 29%.)

38. J. Lee and P. Seeling. Mobile Device-Level Data Modeling Through High Utilization Mobile Applications. In *Proceedings of the IEEE Consumer Communications and Networking Conference (CCNC)*, Las Vegas, NV, January 2014. (Acceptance rate 29%.)
37. M. Tömösköz, P. Seeling, and F. H.P. Fitzek. Performance Evaluation and Comparison of ROust Header Compression (ROHC) ROHCv1 and ROHCv2 for Multimedia Delivery. In *Proceedings of the IEEE International Workshop on Control Techniques for Efficient Multimedia Delivery (CTEMD)*, Atlanta, GA, December 2013.
36. T. Johnson and P. Seeling. Mobile Node Localization using Cooperation and Static Beacons. In *Proceedings of the 5th IEEE Workshop on Cooperative and Cognitive Mobile Networks (CoCoNet)*, Budapest, Hungary, June 2013.
35. P. Seeling. Caching Proxying for Mobile Users. In *Proceedings of the IEEE Vehicular Technology Conference (VTC)*, Dresden, Germany, June 2013. (Acceptance rate 40%.)
34. J. Lee and P. Seeling. An Overview of Mobile Device Network Traffic and Network Interface Usage Patterns. In *Proceedings of the IEEE International Conference on Electro/Information Technology (EIT)*, Rapid City, SD, USA, May 2013.
33. C. Sulisz, T. Johnson, and P. Seeling. Video Characteristics of Mobile Videos on Android Devices: Initial Results. In *Proceedings of the IEEE International Conference on Electro/Information Technology (EIT)*, Rapid City, SD, USA, May 2013.
32. C. Sulisz and P. Seeling. An off-the-shelf wearable HUD system for support in indoor environments. In *Proceedings of the International Conference on Mobile and Ubiquitous Multimedia (MUM)*, Ulm, Germany, December 2012.
31. A. Pulipaka, P. Seeling, and M. Reisslein. Traffic Models for H.264 Video Using Hierarchical Prediction Structures. In *Proceedings of IEEE Global Communications Conference (GLOBECOM)*, Anaheim, CA, USA, December 2012.
30. M. Oner, J. Pulcifer-Stump, P. Seeling, and T. Kaya. Towards the Run and Walk Activity Classification through Fall Detection – an Android Application. In *Proceedings of the 34th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS)*, San Diego, CA, USA, August 2012.
29. T. Johnson and P. Seeling. Localization using Bluetooth Device Names. In *Proceedings of the ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc)*, Hilton Head Island, SC, USA, June 2012.
28. P. Seeling. Hybrid and Secure Scheme for Pre-Ordered Video Delivery over Low-Bandwidth Links. In *Proceedings of the IEEE International Conference on Electro/Information Technology (EIT)*, Indianapolis, IN, USA, May 2012.
27. M. McGarry, P. Seeling, R. Haddad, and J. Hernandez. Accuracy of Video Frame Size Forecasting. In *Proceedings of the IEEE International Conference on Electro/Information Technology (EIT)*, Indianapolis, IN, USA, May 2012.
26. P. Seeling. Power Consumption Evaluation for Cooperative Localization Services. In *Proceedings of the International Joint Conferences on Computer, Information, and Systems Sciences, and Engineering (CISSE)*, December 2011.
25. A. Ellertson and P. Seeling. Work in Progress - Using Mobile & Social Game Technology with Location-based Services for Building Learning Communities. In *Proceedings of the ASEE/IEEE Frontiers in Education Conference (FIE)*, pages S4H-1–S4H-3, Rapid City, SD, USA, October 2011.
24. P. Seeling. Network Performance Evaluation of Microsoft Office Communications Server 2007. In *Proceedings of the IEEE International Conference on Electro/Information Technology (EIT)*, Mankato, MN, USA, May 2011.

23. S. Haase and P. Seeling. SOCKx – An Application Layer Network Switching Framework using SOCKSv5 Protocol Extensions. In *Proceedings of the IEEE International Conference on Electro/Information Technology (EIT)*, Mankato, MN, USA, May 2011.
22. A. Sharma and P. Seeling. Store-and-Forward in High Traffic Sensor Networks. In *Proceedings of the Computer Science On-line Conference 2011*, January 2011.
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. In *ACM Multimedia 2010 Workshop - Mobile Video Delivery (MoViD)*, Firenze, Italy, October 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.
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.
18. M. Hoppe 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.
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.
16. P. Seeling. Scene Change Detection for Uncompressed Video. In *Proceedings of the International Joint Conferences on Computer, Information, and Systems Sciences, and Engineering (CISSE)*, December 2008.
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.
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.
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.
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.**
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.
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.
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.

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.
7. M. Scheutzow, 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.
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.
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.
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.
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.
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.
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.

Publications

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

5. P. Seeling, F. H.P. Fitzek, D. E. Lucani, M. D. Katz, and M. V. Pedersen. Chapter Mobile Clouds: Technology and Services for Future Communication Platforms. In *Fundamentals of 5G Mobile Networks*, Wiley 2015.
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.
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.
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.
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.

Conference Proceedings Reviewed Papers, Abstracts, and Presentations

6. T. A. Johnson and P. Seeling. cacheConnect: On-Device Proxy and Web Cache for Performance Increases (Demo). In *Proc. of IEEE Consumer Communications and Networking Conference (CCNC)*, pages , Las Vegas, NV, USA, pp. 275–276, January 2016.
5. M. Katz, D. E. Lucani, F. H.P. Fitzek, and P. Seeling. Sharing Resources Locally and Widely: Mobile Clouds as the Building Blocks of Shareconomy. In *Proceedings of Wireless World Research Forum 32 (WWRF)*, Vol. 1, Marrakesh, Morocco, May 2014.
4. M. Reisslein, P. Seeling, and L. Karam. H.264 Video Traces for Network Performance Evaluation. *IEEE Communication Society MMTTC E-Letter*, 5(1): 33–35, January 2010.
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 (WWRF)*, Vol. 1, Eindhoven, NL, December 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 (WWRF)*, Vol. 1, Eindhoven, NL, December 2002.
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 (WWRF)*, London, UK, June 2002.

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

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.
1. P. Seeling, F. H.P. Fitzek and M. Reisslein. Videometer. *IEEE Network*, 17(1):5, January 2003.

Demonstrations not in Proceedings

2. R. Kohvakka, T. Johnson and P. Seeling. An Inexpensive Testbed For Mobile Device Power Measurement. In *IEEE Online Conference on Green Networking (OnlineGreenCom)*, Online, October 2013.
1. S. Mead and P. Seeling. NTraX: A Network Traffic Capturing and Remote Profiling Framework for Crowd-Sourcing Mobile User Data. In *IEEE Online Conference on Green Networking (OnlineGreenCom)*, Online, October 2013.

Filed Patent and Invention Disclosures

6. Y. Alghamdi and P. Seeling. Activity-Based Cloud Push Notifications using Subscription Channels for Mobile User Device Multiplicity. Submitted to the Office of Research and Sponsored Programs at Central Michigan University, September 2014.
5. T. Johnson and P. Seeling. Decentralized User-Centric Content Prefetching and Modification. Submitted to the Office of Research and Sponsored Programs at Central Michigan University, July 2014.
4. P. Seeling. Continuous Vision Therapy through Transparent Vision Systems. Submitted to the Office of Research and Sponsored Programs at Central Michigan University, November 2012.
3. P. Seeling and J. Starren. Ad-Hoc Association of Pre-Determined ZigBee devices. *WiSys Reference No. R09001US*. September, 2008.
2. P. Seeling. Entropy-based Scene Change Detection. *WiSys Reference No. T08030US*, June, 2008.
1. P. Seeling and M. Reisslein. Video Coding with Multiple Descriptors and Spatial Scalability for Device Diversity. *ASU Case No. M5-013*.

Invited Contributions and Presentations

3. P. Seeling. REVEL educator study assesses quiz, exam, and final course grades at Central Michigan University. *Pearson Educator Study*, <http://www.pearsoned.com/results/revel-educator-study-assesses-quiz-exam-final-course-grades-central-michigan-university/>, Online, May 2016.
2. P. Seeling. Wireless and Multimedia Research and Development at UW–Stevens Point. *Second Annual Wisconsin Science & Technology Symposium*, La–Crosse, WI, July 2009.
1. P. Seeling. Busy Bee – An Introduction to ZigBee and Its Potential for Home Monitoring. *Marshfield Clinic Research Foundation*, Marshfield, WI, April 2008.

Professional and Scientific Service

Scientific and Professional Society Memberships

- 2011–present **Senior Member**, *Association for Computing Machinery (ACM)*.
(Student) member since 2003
- 2011–present **Senior Member**, *Institute of Electrical and Electronics Engineers (IEEE)*.
(Student) member since 2003

Professional Committee Work

- 2012–present **Member**, *IEEE Communication Society Technical Subcommittee on Green Communications and Computing (TSCGCC)*.
- 2010–present **Web Coordinator**, *IEEE Communication Society Technical Committee on Computer Communications (IEEE TCCC)*.
- 2008–present **Member**, *IEEE Communication Society Multimedia Communications Technical Committee (IEEE MMTC)*.

Journal Editing

- 2017–2018 **Editor**, *Special issue “Mobile and Wireless Networks”, Journal of Sensor and Actuator Networks, MDPI*.
- 2016–present **Editorial Board Member**, *Wireless Communications and Mobile Computing, Hindawi/Wiley*.
- 2011–present **Associated Editor**, *International Journal on Trust Management in Computing and Communications (IJTMCC)*, InderScience, UK.

Journal Referee

- Journal of Communications and Networks: 2015
- International Journal of Network Management: 2014
- IEEE Internet of Things Journal: 2014
- International Journal on Trust Management in Computing and Communications: 2014
- Journal on Wireless Communications and Networking: 2014
- IEEE Transactions on Vehicular Technology: 2014
- IEEE Communications Surveys & Tutorials: 2013
- ETRI Journal: 2013
- International Journal of Ad Hoc and Ubiquitous Computing: 2013
- IEEE Communication Letters: 2010, 2013
- IEEE Communications Magazine: 2012, 2013
- International Journal of Vehicular Technology (Hindawi): 2012
- Computer Networks Journal (Elsevier): 2012
- IEEE Wireless Communications Magazine: 2012
- ACM Transactions on Multimedia Computing, Communications, and Applications: 2012
- Advances in Multimedia (Hindawi): 2010, 2012, 2014
- Journal of Digital Information Management (DIRF): 2010
- Transactions on Signal Processing Journal (WSEAS): 2010
- Computer Communications (Elsevier): 2009
- IEEE Transactions on Signal Processing: 2009
- IEEE Transactions on Broadcasting: 2005

Professional and Scientific Service

Journal Referee (continued)

- Wireless Personal Communications (Springer): 2005

Conference Chairing and Co-Chairing

- IEEE International Conference on Electro/Information Technology (EIT) 2012 Session Chair
- ASEE/IEEE Frontiers in Education Conference (FIE) 2011 Session Chair
- Fourth International Conference on the Applications of Digital Information and Web Technologies (ICADIWT): 2011 Program Co-Chair
- International Conference on Advances in Computing and Communications (AICC): 2011 Tutorial Co-Chair

Conference Technical/Program Committee Member

- IEEE/IFIP International Workshop on Quality of Experience Centric Management (QCMAN): 2015, 2016
- IEEE Consumer Communications and Networking Conference (CCNC): 2006 – 2008, 2013 – 2017
- IEEE Global Communications Conference (GLOBECOM) : 2011 – 2014
- IEEE Cognitive and Cooperative Wireless Networks Workshop (CoCoNet): 2008 – 2015
- IEEE International Conference on Connected Vehicles & Expo (ICCVE): 2013
- IEEE International Conference on Multimedia & Expo (ICME): 2011
- IARIA International Conferences on Advances in Multimedia (MMEDIA): 2011
- International Conference on Advances in Computing and Communications (AICC): 2011
- European Wireless (EW): 2009
- International Joint Conferences on Computer, Information, and Systems Sciences, and Engineering (CISSE): 2008
- 4th International ICST Mobile Multimedia Communications Conference (ICST Mobimedia): 2008

Conference Reviewer

- IEEE ICME: 2013
- IEEE INFOCOM: 2012
- IEEE International Conference on Communications (ICC, incl. Workshops): 2012
- WASET International Conference on Computer Science, Engineering and Applications (ICCSEA): 2012
- AIRCC CSIA,NECO,WIMOA: 2012
- ASEE/IEEE Frontiers in Education Conference (FIE): 2011
- IEEE International Conference on Electro/Information Technology (EIT): 2011

Other Professional Service

- 2015 NSF CAREER Proposal Reviewer, The University of Texas at El Paso
- 2015 Tenure Packet Reviewer, The University of Texas at El Paso

Central Michigan University Service

Department of Computer Science

- Member, Department Internationalization Committee, Fall 2017 – present
- Member, ABET Accreditation Committee, Fall 2016 – present
- Member, Department By-Law Committee, Fall 2015 – present
- Undergraduate Student Co-Advisor, Fall 2013 – present
- Member, Department Hardware/Software Committee, Fall 2012 – present
- College of Science and Engineering day, Summer 2016
- Chair, Department Faculty Release Time Committee, Fall 2014
- Member Department Chair Election Committee, Spring 2014
- Member Department Hiring Committee (3 positions in ITC track), Fall 2012
- CMU Science, Engineering and Technology (SET) day, Summer 2011, 2012

College of Science and Technology

- Member CST Alumni Advisory Board, Spring 2014 – present
- Member MS-NAS Committee, Spring 2012 – 2015
- Member ORSP Internal Grant Review Committee for CST proposals, Spring 2014
- Member CST Strategic Planning Committee, Fall 2012
- CMU and You Day, Fall 2011
- Member College of Science and Technology Associate Dean Search Committee, Fall 2011

University

- Member, Great Explorations in Math and Science (GEMS) Advisory Board, Spring 2013 – present
- Member Degrees, Admissions, Standards, and Honors (DASH) Committee, Fall 2012 – present

University of Wisconsin-Stevens Point Service

Department of Computing and New Media Technologies

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

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

University

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

Evaluation of Instruction and Curricular Development

Student Opinion Scores

Overview Comparative student opinion scores of instructor effectiveness as measured by courses offered at Central Michigan University and the University of Wisconsin-Stevens Point converted to a 5 point Likert scale ranging from 4.00 (highest, strongly agree) to 0.00 (lowest, strongly disagree).

Total number of students instructed in class: 962

Overall weighted average: 3.32 / 4.00

Central Michigan University

Central Michigan University All student evaluations are on a 5 point Likert scale ranging from 4.00 (highest, strongly agree) to 0.00 (lowest, strongly disagree). The provided evaluation results are for the course average and standard deviation in student answers for the 'Overall instructor effectiveness.'

Year and Course Term	Course Number	Title and Section	Students	Mean, Std. Dev. Dept. Avg.
2017	ITC265 [‡]	Basics of Data Comm. & Comp. Netw.	23	3.07, 1.12
	Fall CPS496A	Android Development	13	3.55, 0.5
2017	ITC265 [‡]	Basics of Data Comm. & Comp. Netw.	11	3.33, 0.67
	Spring ITC530	Mobile Computing	1	4, 0
2016	Fall CPS180 [‡]	Principles of Computer Programming	21	2.83, 1.28
	ITC265	Basics of Data Comm. & Comp. Netw.	21	3.38, 0.81
	CPS596A	Android Programming	20	3.92, 0.28
2016	ITC530	Mobile Computing	11	3.75, 0.43
Summer				
2016	ITC530	Mobile Computing	48	3.3, 0.89
Spring				
2015	CPS180	Principles of Computer Programming	42	3.02, 0.82
Fall	ITC630	Cloud Computing	27	4.0, 0
2015	ITC530	Mobile Computing	5	4.0, 0
Summer				
2015	Spring CPS180	Principles of Computer Programming	69	2.93, 0.89,
	CPS180	Principles of Computer Programming	18	3.5, 0.71,
	CPS396M	Mobile Computing: Android	17	3.25, 0.83
2014	Fall ITC265	Basics of Data Communication & Computer Networks	27	3.18, 0.98, 2.87
	CPS180	Principles of Computer Programming	73	2.95, 1.13, 2.87
	CPS180	Principles of Computer Programming	25	2.75, 1.20, 2.87
	CPS165 [†]	Modern Website Design		
	Spring ITC265	Basics of Data Communication & Computer Networks	28	2.88, 1.05, 3.0
	CPS596M	Mobile Computing	12	3.5, 0.5, 3.0
2013	Fall ITC265	Basics of Data Communication & Computer Networks	21	2.81, 1.07, 2.73
	CPS396M	Mobile Computing: Android	15	3.75, 0.6, 2.73
2013	ITC265	Basics of Data Communication & Computer Networks	24	3.33, 0.75, 3.04
Spring				
2012	ITC265	Basics of Data Communication & Computer Networks*	25	2.45, 0.92, 2.99
Fall				
2012	Spring CPS181	Introduction to Data Structures*	9	3.8, 0.4, 3.13
	CPS396M	Mobile Computing: Android*	26	3.13, 0.9, 3.13
2011	CPS282	Introduction to Multimedia Design*	6	3.8, 0.40, 3.09
Fall				
			638	3.19

* Initial course offering (or new preparation). † Partial course offering starting in the middle of the semester. ‡ Educational research conducted during the semester.

Evaluation of Instruction and Curricular Development

University of Wisconsin-Stevens Point

University of Wisconsin-Stevens Point 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'.

Year and Course Term	Title and Section Number	Students	Median, Dept. Comp.
2011 Spring	CIS225 Data Communication and Networks	18	2.0, 1.5
	CIS460 Advanced Topics in Networking	7	1.1, 2.5
	CIS464 Wireless Networking and Devices	3	1.0, 2.5
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
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
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
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 Winterim	CIS346 Wireless Networks and Devices	11	1.1, 1.4
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
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 Winterim	CIS330 Computer and Network Architecture	18	1.8, 2.1
		324	1.45

Evaluation of Instruction and Curricular Development

Courses and Course Material Developed

- Summer 2015 **CPS530: Mobile Computing**, *Central Michigan University*.
Course development for a graduate level course that covers multiple facets of mobile computing in the context of current trends and developments. The course focuses on networking, content and resource dissemination, as well as practical implementation aspects using the Android mobile framework as example.
- Spring 2014 **CPS596M: Mobile Computing**, *Central Michigan University*.
Course development for a graduate level course that uses paper critiques and projects in addition to lectures and discussions.
- Spring 2012 **CPS396M: Mobile Computing: Android**, *Central Michigan University*.
Course development for an Android OS course that combines introduction to the OS, mobile application development, and with other external services.
- Spring 2010 **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.
- Spring 2009 **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.
- Spring 2009 **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.
- Spring 2005 **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.
- Fall 2004 **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.

Evaluation of Instruction and Curricular Development

Masters Projects Supervised at Central Michigan University

	Year and Term	Student	Title and Summary
MS Projects, "Plan B"	2016 Fall	Pranav Botti	<i>Segmented Image Transmission with WebRTC</i> WebRTC based spherical image transmission system.
	2016 Fall	Kanayia Kariya	<i>Image/Video Augmented Reality Player</i> JavaScript based image/video player for sperical content with camera and sensor data capture for storage.

Evaluation of Instruction and Curricular Development

Independent Studies Supervised at Central Michigan University

Year and Course Title		Student(s)
Term	Number	
2016 Spring	CPS497 Network+/Security+ Certification	E. Reno T. Ross
2015 Fall	CPS497 Healthcare Networking CPS697 Web Cache Lifetime Evalaution Mobile Resource Utilization Framework Mobile Device Network Utilization	R. Bielecki T. Johnson H. Salman N. Veeramachaneni
2015 Spring	CPS497 Network+/Security+ Certification CPS597 Mobile Resource Utilization Framework	D. Hoyle H. Salman
2014 Fall	CPS497 Network+/Security+ Certification	R. Barnum N. Pionk
2014 Summer	CPS597 Cloud Push Notifications VANET Routing	Y Alghamdi R. Subramaniam
2014 Spring	CPS497 Embedded Device Administration CPS497 Video Quality in Augmented Reality Settings CPS497 Mobile Network Monitoring Application CPS497 Network+/Security+ Certification	J. Brandt J. Whaley S. Mead R. Groulx M. Hewitt D. Hoyle
Independent Studies 2013 Fall	CPS497 Interactive Public Displays	J. Sage
2013 Summer	CPS497 Event Calendaring System Android ADK	E. Byrne N. Miu
2013 Spring	CPS497 Exploration of Mobile Development Internet Traffic Generator w/GUI Remote Booting and OS Management Platform CPS597 Continuous Power Measurement Framework	C. Jacobs M. Norton J. Scott R. Kohvakka
2012 Fall	CPS497 Video Streaming	P. Cortright
2012 Summer	CPS497 Cooperative Localization using Bluetooth Mobile Device Power Measurement Instrumenta- tion Pandaboard RAW Socket Interface	T. Johnson R. Kohvakka R. Kohvakka
2012 Spring	CPS497 Localization using Bluetooth Device Names NFC based communication Mobile User Localization Traces	T. Johnson S. Rangos J. Gumm
2011 Fall	CPS497 Multi-player Strategy Game Development	E. Price

Undergraduate Studies Supervised at University of Wisconsin-Stevens Point

		Year and Course Title	Student(s)
	Term	Number	
Independent Studies	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
	2010 Fall	CIS499 Intelligent Network Selection Using User Trends (4)	A. Sharma
	2009 Fall	CIS399 Sun SPOT Heavy Data Streaming (3)	A. Sharma
	2009 Spring	CIS499 Bluetooth Media Streaming (2)	D. Briske
	2008 Fall	CIS499 Connectivity for Windows Server 2008 (3)	R. Stieber

Undergraduate Capstone Projects Supervised at University of Wisconsin-Stevens Point

		Year and Course Title	Student(s)
	Term	Number	
Capstone Projects	2010 Fall	CIS480 Evaluation of Private Ubuntu Enterprise Clouds for Virtual Laboratories	B. Schreiber, C. Redmond
	2010 Spring	CIS480 DimDim Web Conferencing Traffic Analysis	W. Gao, R. Korth, J. Yuan
	2009 Fall	CIS480 Bootable Virtual Environments with Server Connectivity	J. Nugent, F. Passineau

Evaluation of Instruction and Curricular Development

Bachelor and Masters Theses Awarded/Advised

Degrees were awarded to M. Hoppe and S. Haase 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. Student advising leading to M.S. degrees awarded to H. Sundaraman, S. Hiremath, A. Pulipaka, S. Chikkerur was performed under a consulting agreement with the Department of Electrical Engineering, Arizona State University, Tempe, Arizona.

Student	Degree	Project Title	Term, Year
John Roush	M.S.	A General-Purpose Structured Data Format	Spring 2017
Hesham Salman	M.S.	Mobile Application Usage Pattern Analysis <i>Software Engineer at VTS, Inc.</i>	Spring 2016
Troy A. Johnson	M.S.	Modeling Mobile Web Characteristics for Energy-Optimized Delivery <i>Project Manager (IT FCG) at Ford Motor Company</i>	Fall 2015
Yousef Alghamdi	M.S.	Activity-Based Cloud Sending and Push Notifications	Summer 2015
Junghyo Lee	M.S.	Mobile Application Usage Patterns of Android Mobile Users <i>Ph.D. Candidate, Arizona State University</i>	Spring 2014
Hari Sundararaman	M.S.	Error Resilient H.264/SVC Video Transmission over Wireless Networks	Spring 2011
Sushmith Hiremath	M.S.	H.264 CGS HD Video Characteristics	Fall 2010
Steffen Haase	B.S.	Cooperation of Wireless Networks	Fall 2009
Rohan Gupta	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	M.S.	Traffic and Quality Characterization of Coarse-Grain Quality Scalable (CGS) H.264 SVC Encoded Video	Fall 2009
Shyamprasad Chikkerur	M.S.	Traffic and Objective Video Quality Characteristics of H.264 SVC Single-Layer Encoded High-Definition Videos	Fall 2009
Michael Hoppe	Dipl.	Process and Analysis of Application Virtualization Distribution	Spring 2009

Ph. D. Theses Awarded/Advised

Student	Project Title	Term, Year
Akhilesh Thyagaturu	Software Defined Applications in Cellular and Optical Networks	Fall 2017 (ASU)
Nicholas Green	Example Based Pedagogical Strategies in a Computer Science Intelligent Tutoring System	Spring 2017 (DePaul)
Yousef Dashti	Efficient Routing and Resource Sharing Mechanisms for Hybrid Optical-Wireless Access Networks	Spring 2016 (ASU)
Frank James	Multi-nodal Wireless Communication Research	2016 (exp.) (ASU)
Po-Yen Chen	Design and Performance Analysis of Fiber Wireless Networks	Fall 2015 (ASU)
Adolph Seema	Flexi-WVSNP-DASH: A Wireless Video Sensor Network Platform for the Internet of Things	2016 (exp.) (ASU)
Venkata Sai	Traffic Characterization and Modeling of	Fall 2012
Akshay Pulipaka	H.264 Scalable and Multiview Encoded Video <i>He is now with Modern Video, San Jose, CA, USA</i>	(ASU)