

Jens Hannemann

Professional Preparation:

Diploma (M.S.-equivalent) Electrical Engineering, Oct. 1995

PhD., Electrical Engineering, Christian-Albrechts-University, Kiel, Germany, Dec. 2003, Dissertation Title: "Hybrid Field Analysis of the Canonical GTEM Cell — An Object-Oriented Approach"

Post-Doctoral Scholar, University of Kentucky, Dept. of Electrical and Computer Engineering, Aug. 2002–Aug. 2004

Appointments:

Assistant Research Professor, Dept. of Electrical and Computer Engineering, University of Kentucky, Lexington, KY, USA (7/2008-present)

Research Engineer, Center for Visualization and Virtual Environments University of Kentucky, Lexington, KY, USA (10/2005-6/2008)

Research Scholar, Center for Visualization and Virtual Environments, University of Kentucky, Lexington, KY, USA (9/2004-9/2005)

Research Scholar, Dept. of Electrical and Computer Engineering, University of Kentucky, Lexington, KY, USA (8/2002-8/2004)

Research Assistant, Computational Electromagnetics Group, Dept. of Electrical Engineering, Christian-Albrechts-University of Kiel, Germany (9/1998-6/2002)

Research Assistant, Theoretical Electrical Engineering, Dept. of Electrical Engineering, Ruhr- University Bochum, Germany (11/1995-8/1998)

Relevant Publications

- [1] Jens Hannemann, Kevin Donohue, and Hank Dietz. A cluster-based computing infrastructure for wide-area multi-modal surveillance networks. In *Proceedings of the International Symposium on Circuits and Systems (ISCAS)*, pages 2070–2073. IEEE, May 2008.
- [2] Jens Hannemann, Kevin Donohue, Michael Shaw, Charles Maynard, Danny Crasto, and Hank Dietz. Data and process flow architecture for the ambient virtual assistant (AVA). In *13th Annual Kentucky EPSCoR Conference: Building Team Science*, Lexington, KY, October 2007.
- [3] Jens Hannemann, Kevin Donohue, and Hank Dietz. A multi-threaded, distributed hard- and software architecture for audio signal processing. In *12th Annual Kentucky EPSCoR Conference: Exploring Shared Interests with National Labs*, Louisville, KY, May 2006.
- [4] Regina Hannemann, Jens Hannemann, Michael Zellerhoff, and Ludger Klinkenbusch. Scientific programming in field theory, part I. *Computing in Science and Engineering*, 3(3):66 – 74, May/June 2001.
- [5] Jens Hannemann, Regina Hannemann, Michael Zellerhoff, and Ludger Klinkenbusch. Scientific programming in field theory, part II. *Computing in Science and Engineering*, 3(4):78 – 85, July/August 2001.

Other Publications

- [1] Jens Hannemann. Broadband multipole-matched rendering: The current state of affairs. In *Proceedings of the 2009 Ambisonics Symposium*, Graz, Austria, June 2009. Institut für Elektronische Musik und Akustik, Universität für Musik und darstellende Kunst.
- [2] Jens Hannemann, Christopher Leedy, Kevin Donohue, Sascha Spors, and Alexander Raake. A comparative study of the perceptual quality of wave field synthesis versus multipole matching for audio rendering. In *Proceedings of the International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, pages 397–400. IEEE, April 2008.

- [3] Jens Hannemann and Christopher Leedy. A monte-carlo study on the convergence of multipole-matched audio rendering. In *Proceedings of the IEEE SoutheastCon 2008*, pages 507–510. IEEE, May 2008.
- [4] Jens Hannemann and Kevin Donohue. Virtual sound source rendering using a multipole-expansion and method-of-moments approach. *Journal of the Audio Engineering Society*, 56(6):473–481, June 2008.
- [5] Kevin Donohue, Jens Hannemann, and Hank Dietz. Performance of phase transform for detecting sound sources with microphone arrays in reverberant and noisy environments. *Signal Processing*, 87(7):1677–1691, July 2007.

Synergistic Activities:

Dr. Hannemann tries to stress the importance of best software engineering practices to electrical and computer engineering students. He has recently designed and taught a tools-oriented graduate-level class on high-performance computing, which introduced students to multi-threading and cluster computing from a real-world, hands-on perspective.

He has been actively involved in the University of Kentucky Department of Electrical and Computer Engineering’s NSF-sponsored Research Experience for Undergraduates (REU) program and will continue his commitment during the upcoming extension of that program through 2012.

Dr. Hannemann is an active senior member of the IEEE. He currently serves as Chair of the IEEE Publications Services and Products Board (PSPB) Strategic Planning Committee as well as a member of the overall IEEE Strategic Planning Committee. In this capacity he helps to operate IEEE’s multi-million dollar publishing business, developing the long-range strategy for this organization and to ensure IEEE can meet the upcoming challenges posed by the information society.

In the past, he has served on the Ethics and Member Conduct committee that handles misconduct allegations against IEEE members and fosters the awareness of ethics-related issues to IEEE members and society as a whole. He was part of an effort to widen the scope of the IEEE Code of Ethics and has held ethics-related seminars in the University of Kentucky’s Electrical Engineering REU program.

Due to his international background, Dr. Hannemann has also served as the PSPB liaison to IEEE’s Transnational Committee. He tries to raise awareness of international and transnational issues and cultural diversity in his professional work wherever possible. He initiated an international collaboration with Deutsche Telekom Labs in Berlin, Germany, where one of the Audio Lab’s undergraduate students conducted audio perception experiments during the summer of 2007.

Collaborators:

Melody Carswell (University of Kentucky)
 Sen-ching S. Cheung (University of Kentucky)
 Hank Dietz (University of Kentucky)
 Kevin Donohue (University of Kentucky)
 Stephen Gedney (University of Kentucky)
 Bill Gregory (University of Kentucky)
 Jane Huffman Hayes (University of Kentucky)
 Sebastian Möller (Deutsche Telekom Laboratories, Berlin, Germany)
 Ingrid St. Omer (University of Kentucky)
 Meikang Qiu (University of Kentucky)
 Bruce Walcott (University of Kentucky)
 Ruigang Yang (University of Kentucky)

Graduate and Postdoctoral Advisors:

Stephen Gedney (University of Kentucky, Postdoctoral Advisor)
 Ludger Klinkenbusch (Christian-Albrechts-University, Kiel, Germany, PhD Thesis Advisor)
 Daniel De Zutter (University of Gent, Belgium, PhD Thesis External Referee)
 Siegfried Blume (Ruhr-University, Bochum, Germany, Diploma Thesis Advisor)