

Eric A. Lehmann

Curriculum Vitæ

Personal Details

Full name Eric André Lehmann (Ph.D. Eng. ANU, M.Phil. Eng. ANU, Dipl. El.-Ing. ETHZ)
Current position Research Scientist, Commonwealth Scientific and Industrial Research Organisation
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Date of birth June 4, 1976
Citizenship Swiss, Australian (since March 23, 2009)
Marital status De facto

Higher Education

Postgraduate

2001 – 2004 Doctor of Philosophy in Engineering at the Research School of Information Sciences and Engineering, the Australian National University (ANU), Canberra, Australia
Scholarship awards: ANU Ph.D. Scholarship, ANU Tuition Fee Scholarship
1999 – 2000 Master of Philosophy in Engineering at the Faculty of Engineering and Information Technology, the Australian National University (ANU), Canberra, Australia
Scholarship awards: ANU Master Degree Scholarship, ANU Tuition Fee Scholarship

Undergraduate

1994 – 1999 Electrical Engineering Diploma (“Dipl. El.-Ing.”, Master equivalent) from the Department of Electrical Engineering, Swiss Federal Institute of Technology (ETHZ), Zurich, Switzerland

Employment History & Practical Experience

2008 – present Research Scientist, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Perth, Australia
2005 – 2008 Research Fellow, WA Telecomm. Research Institute (WATRI), Perth, Australia
2004 (3 months) Research Engineer with National ICT Australia (NICTA), Canberra, Australia
1999 – 2004 Ph.D. by research and Master Degree by research at ANU, Canberra, Australia
1998 – 1999 Diploma thesis at Oerlikon Contraves (Space Technology), Zurich, Switzerland
1997 (3 months) Internship at Philips Semiconductor AG, section Cordless, Zurich, Switzerland

Selected Publications

- Eric A. Lehmann and Anders M. Johansson, “Prediction of Energy Decay in Room Impulse Responses Simulated with an Image-Source Model”, *Journal of the Acoustical Society of America*, vol. 124, nr. 1, pp. 269–277, July 2008
- Eric A. Lehmann, Anders M. Johansson, and Sven Nordholm, “Modeling of Motion Dynamics and its Influence on the Performance of a Particle Filter for Acoustic Speaker Tracking”, *IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA '07)*, New Paltz, NY, Oct. 2007

- Eric A. Lehmann and Anders M. Johansson, “Particle Filter with Integrated Voice Activity Detection for Acoustic Source Tracking”, *EURASIP Journal on Advances in Signal Processing*, vol. 2007, Article ID 50870, 11 pages, 2007
- Eric A. Lehmann and Robert C. Williamson, “Particle Filter Design using Importance Sampling for Acoustic Source Localisation and Tracking in Reverberant Environments”, *EURASIP Journal on Applied Signal Processing*, vol. 2006, Article ID 17021, 9 pages, 2006
- Darren B. Ward, Eric A. Lehmann, and Robert C. Williamson, “Particle Filtering Algorithms for Tracking an Acoustic Source in a Reverberant Environment”, *IEEE Transactions on Speech and Audio Processing*, vol. 11, nr. 6, pp. 826–836, November 2003

Skills

General Knowledge

University majors	Discrete-time systems and stochastic signals, analog and digital signal processing and filtering, adaptive filters and neural networks, specialised processors for signal processing, communications systems, acoustics
Ph.D. coursework	Overview courses on: machine learning, logic and automated reasoning, computer vision, telecommunications engineering (wireless communication). Workshops/seminars attended on: intellectual property, commercialisation

Computer Science

Programming	Matlab, Maple, C/C++, Oberon (Modula2), μ -controller and DSP Assembler
Applications	Matlab/Simulink, Maple, Protel, $\text{\LaTeX} 2_{\epsilon}$, ER Mapper, SCOPE DSP Developer Kit, SHARC EZ-Kit, as well as generic software under UNIX, Linux and Windows (OpenOffice, Microsoft Office, XEmacs, Netscape Composer, GIMP, etc.)

Research Interests

My research so far dealt with Bayesian estimation and Sequential Monte Carlo methods, acoustic source localisation and tracking, and array signal processing. I am also interested in applying my knowledge of signal processing to different fields of research such as telecommunications, video and image processing, biomedicine, etc. More generally, my research interests include: acoustics, digital signal processing, speech processing and enhancement, algorithms for real-time signal processing, multimedia information processing and human-machine interaction, and software programming (Matlab, C/C++, etc.).

Languages

French	Native language
German	Fluent: studies in German-speaking Switzerland from 1994 until 1999
English	Fluent (current first language): resident in Australia since 1999

Personal Interests

Music	Didgeridoo, acoustic and electric guitar
Sport	Swimming, horse riding, abseiling, caving
Electronics	Design and production of custom PCBs, Assembler programming for micro-processor-based electronic circuits, general software and GUI programming
Other	Photography, travelling, Calvin & Hobbes comics, billiards (French and American)