

Curriculum Vitae of Jonas Samuelsson

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Academic merits

PhD 2001 **Doctoral degree in information theory**, Chalmers University of Technology, Gothenburg, Sweden. Title of thesis: “Towards Asymptotic Vector Quantization”. Supervisor: Prof. Per Hedelin.

MSc 1996 **Master’s degree in electrical engineering**, Chalmers. Title of thesis: “Insertion Gain Measurements using a Power Macintosh”. Supervisor: Dr. Anders Gingsjö

Employments

Jan 2004–Mar 2006 **Forskarassistent (assistant professor) at Kungliga Tekniska Högskolan (KTH)**, Stockholm. Research activity level at 80 %. Main research focus on source and channel coding for future communication networks, and on speech enhancement applied to mobile communications and to enhancement in hearing aids. Teaching activities at 20 % (see Teaching experience below).

Mar 2002–Dec 2003 **Project employment at KTH**. Main task was to take care of all aspects in the EU ANITA project on speech enhancement for secured mobile communications, see section Management experience for further details. Teaching activities at 20 % (see Teaching experience below).

Apr 1996–Sep 2001 **PhD student in the Information Theory Group, Chalmers** (School of Electrical Engineering). Research on a fundamentally new technique for data compression that realizes near optimal vector quantization (VQ) (VQ is in theory an optimal method for lossy compression but not possible to implement with finite resources like delay and computational power). Teaching activities at 20 % (see Teaching experience below).

Spring 1996 **Developing software for fitting of hearing aids** at Audiologen, Sahlgrenska University Hospital, Gothenburg. A continuation of the master thesis project.

Spring 1996 **Teaching assistant** in Electrical Circuits course, Chalmers.

Management experience

FlexCode project 2002–2006 **Initiator and manager of, and senior researcher** in the project “Seamlessly Scalable GMM Audio Coders for Future Wireless Systems” partially funded by Wireless@KTH (until Dec 2004) with a budget of 500 kSEK. In 2005 this project evolved into the project “Flexible Coding for Heterogeneous Networks” (acronym FlexCode). FlexCode now involves three industrial partners and two academic partners.

ANITA project Mar 2002–Nov 2004 **Technical and administrative manager of, and senior researcher** in the ANITA project. ANITA was an EU project consisting of 5 partners (3 companies, and 2 universities) which funded one senior researcher, and one PhD student in the Sound and Image Processing Lab at KTH. The KTH part of the ANITA budget was 2.8 million SEK, and the project was successfully completed in November 2004.

Course administration 2000–2006 **Course administration** for the 2E1400 Speech Signal Processing course and for the F2E5414 graduate course in Pattern Classification, both at KTH. Course administration during PhD studies at Chalmers.

Teaching experience

Course responsible 2005 **Developing, managing, and lecturing graduate course in Pattern Classification at KTH** (for PhD students), 2005. The course covers Bayesian decision theory, and a range of practical classification techniques like neural networks, support vector machines, classifiers based on parametric pdf models (e.g., Gaussian mixture models, hidden Markov models), non-parametric pdf models (e.g., nearest neighbor classifiers).

Course responsible 2002–2005 **Developing, managing, and lecturing undergraduate course in Speech Signal Processing at KTH** (for master students), autumn 2002, 2003, 2004, and 2005. The course covers basic speech signal processing and state of the art techniques in audio coding, speech and speaker recognition, and speech enhancement. Course evaluations are available upon request.

Course responsible 2000–2001 **Developing, teaching, and managing course in Internet communication at Chalmers** (project course for master students) 2000 and 2001. As a part of the project, students implemented a full-duplex PC-based IP-phone system (this was before Skype!).

Teaching assistant 1998–1999 **Teaching assistant in Communication Theory** (master degree level) at Chalmers 1998-1999.

Teaching assistant 1997 **Teaching assistant in Signal Processing** (bachelor level course) at Chalmers 1997.

Teaching assistant 1996 **Teaching assistant in Electrical Circuits course** (bachelor level course) at Chalmers spring 1996.

Supervision/Mentorship experience

- Sriram Srinivasan 2002–2005 PhD student, Sound and Image Processing Lab, KTH (co-supervisor)
- Volodya Grancharov 2002–2006 PhD student, Sound and Image Processing Lab, KTH (co-supervisor)
- MS students 2002–2006 Supervision of 8 master thesis students (examiner from 2004 when promoted to forskarasistent).

Publications and referee experience

- Authorship Author of 7 journal articles, 16 conference papers, one book, and one patent. A complete list of the publications is available upon request as well as copies of individual papers.
- Reviewing experience Have on numerous occasions been acting as referee (reviewer) to the following scientific journals: IEEE Trans. Speech and Audio Processing, IEEE Trans. Signal Processing, IEEE Trans. Information Theory, IEEE Signal Processing Letters.

Languages

- English and Swedish Fluent in writing and conversation.
- French and German Rudimentary knowledge.

Programming skills

- Languages Expert programming skills in MATLAB, C++/C (in Windows, Mac and Linux/Unix environments), JAVA, Pascal.
- Speciality Vast experience of implementations of signal processing algorithms, mainly for simulation purposes but also for real-time applications.
- Real-time programming Experience of real-time programming in Linux (IP-phone/chat-programs), Windows (IP-phone/chat-programs), and Apple Macintosh (hearing aid fitting) operating systems.
- Hobby interest Artificial intelligence. Examples are available on request or can be tested at www.geocities.com/sammymad (these applications were programmed on my free time, outside work).
- GUI programming Thorough experience with GUI API:s like Microsoft Visual C++ MFC, QT from TrollTech, MATLAB's GUI API and JAVA's GUI API.

Trivia

Full name/Nationality/Date of birth Leif Jonas Samuelsson / Swedish / June 1st, 1971

Favorite outdoor activities Rock climbing, telemark skiing, hiking, kayaking

Former elite volleyball player Top 20 in the Swedish beach volley tour 1993-1994. Instructor at Fysiken, Göteborg 1993-2000

Hobbies Music (producing and consuming), computer programming (especially interested in AI in computer games), radio controlled machines

More private info at www.geocities.com/sammymad