

Seppo Enarvi

CONTACT INFORMATION	Nuance Communications Jülicher Strasse 376 52070 Aachen Deutschland	<i>Mobile:</i> +49-176-4202-4940 <i>E-mail:</i> seppo2018@marjaniemi.com <i>WWW:</i> http://senarvi.github.io/
GENERAL INTERESTS	All aspects of machine learning, especially deep learning. I have most experience in language modeling and sequence-to-sequence models, but I'm very excited about computer vision and artificial intelligence in general. I have a strong background in software engineering and I like coding and algorithms. I want to learn constantly and stay on top of this quickly changing field.	
EDUCATION	Aalto University School of Electrical Engineering, Department of Signal Processing and Acoustics, Espoo, Finland <i>Doctor of Science (Technology)</i> September 2012 to May 2018 <ul style="list-style-type: none">• Research Field: <i>Speech and Language Technology</i>• Thesis: <i>Modeling Conversational Finnish for Automatic Speech Recognition</i> Aalto University School of Science, Department of Information and Computer Science, Espoo, Finland <i>Licentiate of Science (Technology)</i> September 2007 to September 2012 <ul style="list-style-type: none">• Research Field: <i>Computer and Information Science</i>• Thesis: <i>Finnish Language Speech Recognition for Dental Health Care</i> Helsinki University of Technology, Department of Computer Science and Engineering, Espoo, Finland <i>Master of Science (Technology)</i> September 1999 to August 2006 <ul style="list-style-type: none">• Major: <i>Interactive Digital Media</i>• Minor: <i>Telecommunications Software</i>• Extended curriculum in mathematics and physics• Thesis: <i>Image-based Detection of Defective Logs</i>	
RESEARCH AND TRAINING	International Computer Science Institute, Berkeley, USA <i>Visiting Researcher</i> February 2012 to August 2012 <ul style="list-style-type: none">• Worked on speech recognition for conversational speech. Asian Institute of Technology School of Engineering and Technology, Information and Communications Group, Pathumthani, Thailand <i>Exchange Student</i> August 2005 to December 2005 The Finnish Defence Forces, Guard Jaeger Regiment <i>Military Service</i> January 2000 to December 2000 <ul style="list-style-type: none">• Rank: <i>Corporal</i>	

WORK HISTORY	Nuance Communications, Aachen, Germany <i>Senior Research Scientist</i> <i>NLP/Machine and Deep Learning</i> December 2017 to present <ul style="list-style-type: none"> • Abstractive conversation summarization using sequence-to-sequence models.
	Aalto University, Espoo, Finland <i>Doctoral Candidate</i> January 2011 to November 2017 <ul style="list-style-type: none"> • Worked on subword, class, and neural network language models. • Developed AaltoASR decoder and server backend (C++). • Developed TheanoLM language modeling toolkit (Python). • Collected a conversational Finnish text corpus from the Internet using data selection algorithms. • Supervised collection of an acoustic training corpus (DSPCON).
	Genera Oy, Helsinki, Finland <i>Software Designer</i> May 2001 to January 2012 <ul style="list-style-type: none"> • Implemented new graphical features to display panel software (C++). • Designed and developed a distributed system for updating content to KONE InfoScreen elevator displays (C++, PHP, JavaScript). • Developed image analysis algorithms and designed computer vision systems for timber grading and internal quality control (C++). • Developed Mitla software for timber measurement and refining (Visual Basic). • Developed configuration script parsers for control and diagnostics panels (Perl).
	JOKO Executive Education Oy, Helsinki, Finland <i>Computer Assistant</i> April 1999 to May 1999 June 1998 to July 1998 <ul style="list-style-type: none"> • Performed local area network administration. • Produced graphic content for course material. • Provided assistance with office software, desktop computers, and A/V equipment.
	City of Helsinki Education Department, Helsinki, Finland <i>IT Project Tutor</i> January 1998 to May 1998 <ul style="list-style-type: none"> • Taught common desktop software to school teachers. • Scanned photographs for Picture Archives of Helsinki City Museum.
	PUBLICATIONS Peter Smit, Siva Reddy Gangireddy, Seppo Enarvi, Sami Virpioja, Mikko Kurimo (2017) Character-Based Units for Unlimited Vocabulary Continuous Speech Recognition In Proceedings of the 2017 IEEE Automatic Speech Recognition and Understanding Workshop (ASRU) Peter Smit, Siva Reddy Gangireddy, Seppo Enarvi, Sami Virpioja, Mikko Kurimo (2017) Aalto System for the 2017 Arabic Multi-Genre Broadcast Challenge In Proceedings of the 2017 IEEE Automatic Speech Recognition and Understanding Workshop (ASRU) Seppo Enarvi, Peter Smit, Sami Virpioja, Mikko Kurimo (2017) Automatic Speech Recognition with Very Large Conversational Finnish and Estonian Vocabularies IEEE/ACM Transactions on Audio, Speech, and Language Processing

Mikko Kurimo, Seppo Enarvi, Ottokar Tilk, Matti Varjokallio, André Mansikkaniemi, and Tanel Alumäe (2017)
[Modeling under-resourced languages for speech recognition](#)
 Language Resources and Evaluation (LRE)

Seppo Enarvi, Mikko Kurimo (2016)
[TheanoLM – An Extensible Toolkit for Neural Network Language Modeling](#)
 In Proceedings of the 17th Annual Conference of the International Speech Communication Association (INTERSPEECH)

Seppo Enarvi and Mikko Kurimo (2013)
[Studies on Training Text Selection for Conversational Finnish Language Modeling](#)
 In Proceedings of the 10th International Workshop on Spoken Language Translation (IWSLT 2013)

Seppo Enarvi and Mikko Kurimo (2013)
[A Novel Discriminative Method for Pruning Pronunciation Dictionary Entries](#)
 In Proceedings of the 7th International Conference on Speech Technology and Human-Computer Dialogue (SpeD 2013)

PROGRAMMING EXPERTISE	I am especially confident in C++ and Python. I've used the Standard Template Library, Boost C++ Libraries, NumPy, and Theano extensively. Other programming languages I have used in the past include Java, PHP, Perl, and assembly languages. I have experience in concurrent programming and network programming, and I am keen to write aesthetic, maintainable code.
SPOKEN LANGUAGES	Finnish (native), English (excellent written and spoken), Swedish (fluent written and fair spoken), German (fair written)
OPEN-SOURCE SOFTWARE	Author of TheanoLM , an open source toolkit for language modeling using neural networks. Contributed to AaltoASR , Aalto University speech recognizer.
LAST UPDATED	June 3rd, 2018