

# Seppo Enarvi

---

CONTACT INFORMATION	Nuance Communications Jülicher Strasse 376 52070 Aachen Deutschland	<i>Mobile:</i> +49-176-4202-4940 <i>E-mail:</i> seppo2019@marjaniemi.com <i>WWW:</i> <a href="http://senarvi.github.io/">http://senarvi.github.io/</a>
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	<b>Aalto University School of Electrical Engineering,</b> 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"><li>• Research Field: <i>Speech and Language Technology</i></li><li>• Thesis: <i>Modeling Conversational Finnish for Automatic Speech Recognition</i></li></ul> <b>Aalto University School of Science,</b> 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"><li>• Research Field: <i>Computer and Information Science</i></li><li>• Thesis: <i>Finnish Language Speech Recognition for Dental Health Care</i></li></ul> <b>Helsinki University of Technology,</b> 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"><li>• Major: <i>Interactive Digital Media</i></li><li>• Minor: <i>Telecommunications Software</i></li><li>• Extended curriculum in mathematics and physics</li><li>• Thesis: <i>Image-based Detection of Defective Logs</i></li></ul>	
RESEARCH AND TRAINING	<b>International Computer Science Institute,</b> Berkeley, USA  <i>Visiting Researcher</i> February 2012 to August 2012 <ul style="list-style-type: none"><li>• Worked on speech recognition for conversational speech.</li></ul> <b>Asian Institute of Technology School of Engineering and Technology,</b> Information and Communications Group, Pathumthani, Thailand  <i>Exchange Student</i> August 2005 to December 2005  <b>The Finnish Defence Forces,</b> Guard Jaeger Regiment  <i>Military Service</i> January 2000 to December 2000 <ul style="list-style-type: none"><li>• Rank: <i>Corporal</i></li></ul>	

WORK HISTORY	<b>Nuance Communications,</b> Aachen, Germany <i>Senior Research Scientist</i> <i>NLP/Machine and Deep Learning</i> December 2017 to present
	<ul style="list-style-type: none"> <li>• Abstractive conversation summarization using sequence-to-sequence models.</li> </ul>
	<b>Aalto University,</b> Espoo, Finland <i>Doctoral Candidate</i> January 2011 to November 2017
	<ul style="list-style-type: none"> <li>• Worked on subword, class, and neural network language models.</li> <li>• Developed <a href="#">AaltoASR</a> decoder and server backend (C++).</li> <li>• Developed <a href="#">TheanoLM</a> language modeling toolkit (Python).</li> <li>• Collected a conversational Finnish text corpus from the Internet using data selection algorithms.</li> <li>• Supervised collection of an acoustic training corpus (<a href="#">DSPCON</a>).</li> </ul>
	<b>Genera Oy,</b> Helsinki, Finland <i>Software Designer</i> May 2001 to January 2012
	<ul style="list-style-type: none"> <li>• Implemented new graphical features to display panel software (C++).</li> <li>• Designed and developed a distributed system for updating content to KONE InfoScreen elevator displays (C++, PHP, JavaScript).</li> <li>• Developed image analysis algorithms and designed computer vision systems for timber grading and internal quality control (C++).</li> <li>• Developed Mitla software for timber measurement and refining (Visual Basic).</li> <li>• Developed configuration script parsers for control and diagnostics panels (Perl).</li> </ul>
	<b>JOKO Executive Education Oy,</b> Helsinki, Finland <i>Computer Assistant</i> April 1999 to May 1999 June 1998 to July 1998
	<ul style="list-style-type: none"> <li>• Performed local area network administration.</li> <li>• Produced graphic content for course material.</li> <li>• Provided assistance with office software, desktop computers, and A/V equipment.</li> </ul>
	<b>City of Helsinki Education Department,</b> Helsinki, Finland <i>IT Project Tutor</i> January 1998 to May 1998
	<ul style="list-style-type: none"> <li>• Taught common desktop software to school teachers.</li> <li>• Scanned photographs for <a href="#">Picture Archives of Helsinki City Museum</a>.</li> </ul>
PUBLICATIONS	Peter Smit, Siva Reddy Gangireddy, Seppo Enarvi, Sami Virpioja, Mikko Kurimo (2017) <a href="#">Character-Based Units for Unlimited Vocabulary Continuous Speech Recognition</a> 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) <a href="#">Aalto System for the 2017 Arabic Multi-Genre Broadcast Challenge</a> In Proceedings of the 2017 IEEE Automatic Speech Recognition and Understanding Workshop (ASRU)
	Seppo Enarvi, Peter Smit, Sami Virpioja, Mikko Kurimo (2017) <a href="#">Automatic Speech Recognition with Very Large Conversational Finnish and Estonian Vocabularies</a> 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 <a href="#">TheanoLM</a> , an open source toolkit for language modeling using neural networks. Contributed to <a href="#">AaltoASR</a> , Aalto University speech recognizer.
LAST UPDATED	June 3rd, 2018