

Simon Holmbacka. PhD – Resume

21 September 2018

CONTACT INFORMATION

Haagantie 62
20380 Turku, Finland
Tel: +358 50 5310467
Email: sholmbac@abo.fi
Gender: male
Time of birth: 24.01.1986
Place of birth: Jakobstad, Finland
Nationality: Finnish



POSITION

Data Scientist

Elisa Oyj.
Task: *Mobile network optimization using deep learning*

Data Consultant

Klinik Healthcare Solutions Oy
Task: *Data analyst*

Senior Researcher

University of Turku
Task: *MooC developer for online education*

May 2017 –

September 2018 –

June 2017 –

EDUCATION

Åbo Akademi University, Finland

Doctor of Technology in Computer Engineering (26 Jan. 2016, Turku, Finland)

2011 – 2015

- Faculty: Science and Engineering
- Major: Embedded Computer Systems
- Minor: Software Engineering
- Minor: University Pedagogics
- Thesis: *Energy-Aware Software for Many-Core Systems* **Grade:** Honorary Grade
- Reference: Prof. Johan Lilius johan.lilius@abo.fi

Master of Science in Computer Engineering (31 Mar. 2011, Turku, Finland)

2009 – 2011

- Institution: Information Technologies
- Major: Embedded Computer Systems
- Minor: Control Engineering
- Minor: Software Engineering
- Thesis: *Task Migration in Virtualized Multi-Core Real-Time Systems* **Grade:** 5/5

Bachelor of Science in Computer Engineering (6 Oct. 2009, Turku, Finland)

2006 – 2009

- Institution: Information Technologies
- Major: Embedded Computer Systems
- Minor: Software Engineering

ABOUT ME

I come from the small city of Jakobstad in the mid west of Finland from which I moved to Turku to study computer engineering in 2006. I completed my Master's degree in 5 years (2006 – 2011) and my PhD in 4 years (2011 – 2015) from Åbo Akademi University in Turku, Finland.

Technical

During my PhD, I have worked extensively in the areas of embedded systems, runtime systems, power management and many-core platforms, which includes foremost low level system programming (usually in C). In the area of embedded systems I have experience in other object oriented programming languages, mostly C++ and Java, and I have of course stumbled upon some Java script, xml and assembly programming. I have worked with system modeling, mathematical optimization and control theory including NLP optimization, digital filtering, plane fitting methods, control theory and its underlying mathematics. This means that I have very good knowledge of Matlab, its toolboxes and system simulation in Simulink. On the hardware side, I have excellent knowledge of ARM and Intel platforms in particular, and system/kernel programming using Linux. I have been hacking with the Linux kernel since I was 16 years old and know this world in and out. On further lower level I have worked with real-time operating systems like FreeRTOS during my PhD and I have also build many hobby projects from scratch using micro controllers such as an audio synthesizer complete with a midi interface and USB driver running on an 8-bit AVR.

I am currently working in the corporate as a data scientist. I am mostly using Python and its underlying libraries for data handling and parsing. I have good knowledge in database interfacing with SQL and MongoDB, Docker, OpenShift etc. Further, I have good knowledge in big data deep learning using Tensorflow/Keras and R, and optimization of deep learning models.

Project Work

In the 4 years of making my PhD I have published over 15 international peer reviewed scientific articles, one of which I received the best paper award for in 2014. I worked in the European FP-7 project RECOMP from 2011 – 2014 and in the national Tekes project ParallaX from 2014 – 2016, in which I worked together with universities and international IT companies like Wittenstein ltd., UK and Seven Solutions, Spain on programming and integration tasks. I am a very good team worker, which has shown in co-operations with 7 different universities in 4 countries during this time for my thesis, and outside of my thesis I have published work together with 12 different institutions and co-authored work together with over 30 people. I have visited more than 30 countries in my thesis work, and I find it very easy to join a team and start working on new projects with new people.

Languages



- Swedish: Mother tongue
- Finnish: Conversational
- English: Fluent
- German: Conversational

Pedagogics

Education wise, I have been lecturing university courses in English since 2013 and completed university pedagogics as a minor subject. I created two online education MooCs on coursera.org from scratch in the EIT Digital project in 2015 – 2018, which are now freely available on Coursera and has thousands active students.

About Simon

I would describe myself as a person who takes the initiative, gets things started and gets things done. I have a very good working discipline with regard to time and responsibility, and *I always do the work today instead of leaving it until tomorrow!* I always start a task well on time, and I keep the promised timelines whether it is a question of delivering C code, an article, a presentation, course material or a PhD thesis.

My hobbies are traveling, gardening, skiing, hiking, driving, workout, watching airplanes and Trump-Russia investigation.

TEACHING EXPERIENCE

Course administrator: EIT Digital Online Coursera	
<i>Embedded Hardware and Operating Systems</i>	2018
https://www.coursera.org/learn/embedded-operating-system/	
Course creator: EIT Digital Online Coursera	
<i>Autonomous Runway Detection for IoT</i>	2017
https://www.coursera.org/learn/embedded-systems-larger/	
Course creator and lecturer: EIT Digital Online Coursera	
<i>Development of Real-Time Systems</i>	2016
https://www.coursera.org/learn/real-time-systems/	
Course lecturer: Real-Time Systems Åbo Akademi University	2012 – 2017
Advisor and examiner for thesis work: Åbo Akademi University	2012 – 2016
Prüfer für Abschlussarbeiten: FernUniversität in Hagen	2015 – 2016
Course assistant: Multimedia Algorithm Implementations Åbo Akademi University	Spring 2016
Course assistant: Multimedia Algorithm Implementations Åbo Akademi University	Spring 2013
Course assistant: Real-Time Systems Åbo Akademi University	Spring 2011

AWARDS ★★ ★★ ★★

Researcher of the year

Host: Åbo Akademi University

Rationale: *Awarded researcher of the year for of best PhD thesis during the year 2016*

Best paper award

Host: Conference on Design & Architectures for Signal & Image Processing 2014

Rationale: *Awarded best paper for work on power management system for multi-core processors*

Elisa hackathon winner

Host: Elisa OYj

Rationale: *Awarded first place for "Minder" – Tinder for movies app*

INVITED TALKS	Development of MooCs and Digital Learning Location: Brussels, Belgium Event: EIT Digital Conference 2017 Host: Martijn Klabbers, TU Eindhoven	
PROGRAM COMMITTEES	The 26th Euromicro International Conference on Parallel, Distributed and Network-Based Processing, 2018 Location: Cambridge, UK The tenth Nordic Workshop on Multi-Core Computing, 2017 Location: Uppsala, Sweden	
RESEARCH VISITS	Rennes 4 month research visit Location: Rennes, France Institution: Institut national des sciences appliquées de Rennes Host: Maxime Pelcat, ITER Laboratory Duration: November 2013 - March 2014	
JOINT-COOPERATION	Green Energy Cloud Simulation Partners: Enida Sheme, Polytechnic University of Tirana, Tirana, Albania Dražen Lučanin, TU Vienna, Vienna, Austria Duration: August 15 - November 30 2015 Energy Efficient Cloud Simulation Partners: Dražen Lučanin, Ilia Pietri, Ivona Brandić, TU Vienna, Vienna, Austria Duration: May 15 - May 30 2015 Power-Aware HEVC Decoding with Tunable Image Quality Partners: Erwan Nogues, Maxime Pelcat, INSA de Rennes, France Duration: Winter 2014 Barrelfish port for Tiler Tile64 Partners: Xiaowen Wang, Robert Radkiewicz, Mats Brorsson, SICS, Stockholm, Sweden Duration: Summer 2013 Task Migration Mechanism for Distributed Many-Core NoC Systems Partners: Mohammad Fattah, Amir-Mohammad Rahmani, University of Turku, Finland Duration: Spring 2013 Safe Motor Controller in Mixed-Critical Environment with Runtime Updating Capabilities Partners: José Luis Gutiérrez, University of Granada, Spain Miguel Méndez, Seven Solutions Inc., Spain Duration: November 5 - November 17 2012 Safe Core-to-Core Channel Implementation Partners: William Davy, Wittenstein Inc., UK Duration: May 23 - May 24 2012	
GRANTS	Nvidia Grant 2018 For research on deep learning in telecommunications networks, GTX 1080 i PoDoCo Grant (2.8% acceptance) 2017 For research on network optimization coordinated with Elisa Oyy, Helsinki, 28000€ Waldemar von Frenckells stiftelse 2016 For research on energy aware software, 5000€ Oskar Öflunds stiftelse 2016 For research co-operation with FernUniversität in Hagen, Germany, 3000€ Svenska tekniska vetenskapsakademien i Finland 2015 For research visit to FernUniversität in Hagen, Germany, 4500€ Otto Malms stiftelse 2014 For thesis on energy aware software, 5000€ Svenska tekniska vetenskapsakademien i Finland 2013 For research visit to Rennes, France, 2500€ Tekniikan edistämissäätiö 2013 For thesis on energy aware software, 5000€	

WORK
EXPERIENCE

Elisa Oyj, Helsinki, Finland
Data Scientist
Klinik Healthcare Solutions Oyj, Helsinki, Finland
Data Analyst
University of Turku, Turku, Finland
Senior researcher
Åbo Akademi University, Turku, Finland
Post-Doc Researcher
Fernuniversität in Hagen, Hagen, Germany
Wissenschaftlicher Mitarbeiter
Åbo Akademi University, Turku, Finland
PhD Student
Research assistant
Brisa Inc., Pedersöre, Finland
IT manager
Herrmans Inc., Pedersöre, Finland
IT support
Brisa Inc., Pedersöre, Finland
Webshop assistant
Digicomp Inc., Jakobstad, Finland
Sales person
Technical support

May 2017 –
September 2018 –
June 2017 –
January 2016 – April 2017
September 2015 – April 2017
March 2011 – December 2015
April 2010 – March 2011
May 2009 – September 2009
May 2008 – September 2008
May 2007 – September 2007
July 2006 – September 2006
May 2005 – January 2005

REFEREES

Prof. Johan Lilius
Professor
Åbo Akademi University
Turku Finland
phone: *available on request*
e-mail: *johan.lilius@abo.fi*

Prof. Jörg Keller
Professor
Fernuniversität in Hagen
Hagen Germany
phone: *available on request*
e-mail: *joerg.keller@fernuni-hagen.de*

Kirsi Valtari
VP Telco Efficiency Business
Elisa Oyj
Helsinki Finland
phone: *available on request*
e-mail: *kirsi.valtari@elisa.fi*

Prof. Juha Plosila
Professor
University of Turku
Turku Finland
phone: *available on request*
e-mail: *juplos@utu.fi*

Petteri Hirvonen MD
Co-Founder
Klinik Healthcare Solutions Oyj
Helsinki Finland
available on request
petteri.hirvonen@klinik.fi