

Curriculum vitae

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Abstract—I have a wide technical expertise and I have worked with multiple technologies varying from radio frequency hardware design to Monte Carlo algorithms and machine learning. Besides technology I’m also interested in languages, and I speak five different languages.



Fig. 1. A representative figure of the subject.

I. PUBLICATIONS

- [1] P. Hämäläinen, J. Rajamäki, and C. K. Liu, “Online Control of Simulated Humanoids Using Particle Belief Propagation,” *ACM Transactions on Graphics (TOG)*, 2015.
- [2] K. Naderi, J. Rajamäki, and P. Hämäläinen, “RT-RRT*: A Real-Time Path Planning Algorithm Based on RRT*,” in *Motion in Games (MiG)*. ACM, 2015.
- [3] J. Rajamäki, “Integrated Passive Radio Frequency Filter and Multiplexer Designs,” 2014, Master’s thesis.
- [4] J. Rajamäki, “Kognitiivisen radion etuasteen mahdolliset suodatinteknologiat,” 2012, Bachelor’s thesis.
- [5] T. Kiuru, P. Pursula, J. Rajamäki, and T. Vähä-Heikkilä, “A 60-GHz Semipassive MMID Transponder for Backscattering Communications,” in *International Microwave Symposium (IMS)*. IEEE, 2013.
- [6] K. Naderi, J. Rajamäki, and P. Hämäläinen, “Discovering and Synthesizing Humanoid Climbing Movements,” *ACM Transactions on Graphics (TOG)*, 2017.
- [7] J. Rajamäki and P. Hämäläinen, “Augmenting Sampling Based Controllers with Machine Learning,” in *Symposium on Computer Animation (SCA)*. ACM, 2017.
- [8] J. Rajamäki, K. Naderi, V. Kyrki, and P. Hämäläinen, “Sampled Differential Dynamic Programming,” in *International Conference on Intelligent Robots and Systems (IROS)*. IEEE, 2016.
- [9] J. Rajamäki and P. Hämäläinen, “An Iterative Closest Points Approach to Neural Generative Models,” *arXiv preprint arXiv:1711.06562*, 2017.
- [10] J. Rajamäki and P. Hämäläinen, “Regularizing Sampled Differential Dynamic Programming,” in *American Control Conference (ACC)*. IEEE, 2018.
- [11] J. J. Rajamäki and P. Hämäläinen, “Continuous Control Monte Carlo Tree Search Informed by Multiple Experts,” *IEEE Transactions on Visualization and Computer Graphics*, 2018.
- [12] J. Rajamäki, “Random Search Algorithms for Optimal Control,” Ph.D. dissertation, 2018.

II. ACADEMIC ACTIVITIES

Reviewer for SIGGRAPH 2018

III. EDUCATION

A. Doctor of Science

I graduated as a Doctor of Science from [Aalto University](#) in November 2018. My doctoral dissertation [12] presented new Monte Carlo algorithms for optimal control. The developed algorithms fall to two categories, which are 1) a Monte Carlo version of differential dynamic programming and 2) real-time capable Monte Carlo tree search augmented by machine learning.

B. Master of Science with distinction

I earned my Master of Science degree in electrical engineering from [Aalto University](#) in 2014. I majored in signal processing and did a minor in computational science, i.e. my studies consisted mostly of programming mathematics heavy algorithms. The elective studies contained also radio engineering, and my master’s thesis [3] was about designing integrated radio frequency electronics.

C. Bachelor of Science with honours

I earned my Bachelors degree in electrical engineering from [Aalto University](#) in 2013. My major was electronics and I minored in mathematics. My bachelor’s thesis [4] was in the field of radio frequency electronics and it handled the possibilities of implementing tunable filter technologies.

IV. WORK EXPERIENCE

A. Data Scientist

I have been working as a Data Scientist at [Vincit](#) since August 2018.

B. PhD student

I was a PhD student at [Aalto University](#) in the Department of Computer Science in October 2014 – July 2018. I did research in random search (Monte Carlo) methods for optimal control.

C. Research Scientist

I worked in the Antennas and radio frequency technology team at [VTT Technical Research Centre of Finland](#). The work involved radio frequency hardware projects for various customers. The technologies that I worked with ranged from antennas and simple passive devices to radio frequency micro electro-mechanical components. I worked under the titles:

- Scientist, July 2014 – October 2014
- Research trainee, June 2013 – June 2014
- Research trainee, May 2012 – December 2012.

D. Course assistant

I was an assistant at the course "Applied Probability and Statistics" in [Aalto University](#). The course syllabus comprised the fundamentals of probability and statistics. I was an assistant on the course four times:

- Spring 2012
- Fall 2011
- Spring 2010
- Fall 2009

E. Early work experience

- Project engineer trainee, SRV, Summers 2009 and 2010
- Construction worker, Hartela, Summers 2006 and 2008
- Hamburger assembler, McDonald's, Summer 2007
- Janitor, DB Schenker, Summer 2004

V. LANGUAGE SKILLS

- Finnish, native
- English, fluent
- German, fluent
- Swedish, fluent
- Russian, ok

VI. ICT SKILLS

I have versatile ICT skills ranging from hardware design to high abstraction programming languages. I am most proficient in programming C/C++. I am also comfortable programming Java, Python, and Matlab.

VII. MILITARY SERVICE

Military service is obligatory to all male citizens of Finland. I completed my military service in July 2010 - July 2011 earning the rank of second lieutenant. I completed the reserve officer training in the Reconnaissance Company.