

Elias Jääsaari

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RESEARCH INTERESTS

Machine learning systems, automated machine learning, neural architecture search

EDUCATION

Carnegie Mellon University Pittsburgh, PA

- Doctor of Philosophy in Machine Learning 2020 - 2025 (expected)
Advisor: Prof. Tianqi Chen

University of Helsinki Helsinki, Finland

- Master of Science in Computer Science 2016 – 2017
Specialization: Algorithms, Data Analytics and Machine Learning
Advisor: Prof. Teemu Roos
- Bachelor of Science in Computer Science 2014 – 2016
Minors: Mathematics and Statistics

WORK EXPERIENCE

iKVA Ltd. Aug 2018 – Jun 2020
Software Engineer Cambridge, UK

- Built a content-based recommendation engine that uses our research on fast k -NN search.
- Designed algorithms to make the engine self-tuning and to match content across different languages.

OTHER RESEARCH EXPERIENCE

Aalto University Sep 2017 – Aug 2018
Research Assistant Espoo, Finland

- Designed an algorithm for self-tuning approximate nearest neighbor search (PAKDD 2019).
- Experimented with a new scoring criterion for learning Bayesian networks (AISTATS 2018).

University of Helsinki May 2016 – Aug 2017
Research Assistant Helsinki, Finland

- Proved new results for optimal sequence prediction in a large alphabet setting (ALT 2018).
- Experimented with a new algorithm for approximate nearest neighbor search (Big Data 2016).

TEACHING EXPERIENCE

- Instructor for the Helsinki Univ. course *Data Structures Project* Spring 2016
- Teaching assistant for the Helsinki Univ. course *Introduction to Artificial Intelligence* Spring 2016

PUBLICATIONS

- **E. Jääsaari**, V. Hyvönen and T. Roos (2019). **Efficient autotuning of hyperparameters in approximate nearest neighbor search**, in Proceedings of the 23rd Pacific-Asia Conference on Knowledge Discovery and Data Mining (**PAKDD 2019**).
- T. Silander, J. Leppä-aho, **E. Jääsaari** and T. Roos (2018). **Quotient normalized maximum likelihood criterion for learning Bayesian network structures**, in Proceedings of the 21st International Conference on Artificial Intelligence and Statistics (**AISTATS 2018**).
- **E. Jääsaari**, J. Leppä-aho, T. Silander and T. Roos (2018). **Minimax optimal Bayes mixtures for memoryless sources over large alphabets**, in Proceedings of the 29th International Conference on Algorithmic Learning Theory (**ALT 2018**).
- V. Hyvönen, T. Pitkänen, S. Tasoulis, **E. Jääsaari**, R. Tuomainen, L. Wang, J. Corander and T. Roos (2016). **Fast nearest neighbor search through sparse random projections and voting**, in Proceedings of the 4th IEEE International Conference on Big Data (**Big Data 2016**).

AWARDS

- **The Finnish Society for Computer Science thesis award honorable mention** Jun 2019
awarded for one of three best computer science MSc theses in Finland during 2017–2018
- **University of Helsinki Faculty of Science thesis award** Oct 2017
awarded for an MSc thesis graded Laudatur (with highest honors)

SKILLS

Programming languages	Python, C, C++, OCaml, Java, Haskell, R, JavaScript, SQL
Frameworks and tools	NumPy, Pandas, SciPy, TensorFlow, PyTorch, Kubernetes, Docker
Natural languages	Finnish (native), English (fluent), German (basic), Swedish (basic)