Andreas Munk

PhD Student,
Computer Science

+1 (604) 771 2899
https://ammunk.com
andreas@ammunk.com

Social Network

in/andreas-munk
ammunk

About Me

I am pursuing a PhD in Computer Science at the University of British Columbia, supervised by Frank Wood. My research areas are probabilistic programming, machine learning, and their application in real-world problems. I am specifically interested in Bayesian inference and (conditional) generative modeling using deep learning and how these two frameworks may be combined by leveraging probabilistic programming.

Programming

0 LOC → >10,000 LOC

- Python
- Julia • Clojure • Matlab
- C • C++ • R • Mathematica
- HTML 5
- LaTeX

Languages

- Danish
- English
- German

Education

2018 – 2022 (expected) **PhD. Computer Science** — University of British Columbia, Canada
Focus: Machine learning and artificial intelligence

2016 – 2018 **MSc.** — Technical University of Denmark, Denmark
Mathematical Modelling and Computation (GPA: 11.8/12.0)

2015 – 2015 **Exchange student** — California Institute of Technology, USA
(GPA: 3.6/4.0)

2013 – 2016 **BSc.** — Technical University of Denmark, Denmark
Earth and Space Physics and Engineering (GPA: 10.9/12.0)

Working Experience

Academic Experience and Teachings

2017 **Teaching Assistant** — Technical University of Denmark, Denmark
Course: Introduction to Machine Learning and Data Mining

2016 **Teaching Assistant** — Technical University of Denmark, Denmark
Course: Continuous and Discrete Time Signals

2014 – 2015 **Teaching Assistant** — Technical University of Denmark, Denmark
Course: Advanced engineering mathematics 1

Industrial Experience

2017 **Internship** — Canecto, Copenhagen
In charge of building the company's core machine learning models

Scholarships and Awards

2018 – 2022 **Faculty of Science PhD Tuition Award** — University of British Columbia
Amount: 5460 CAD/yr

2018 – 2022 **International Tuition Award** — University of British Columbia
Amount: 3200 CAD/yr

2018 **Research travel grant** — IEEE Signal Processing Society (SPS)
Amount: 3700 DKK

2018 **Research travel grant** — DTU Compute, Denmark
Amount: 7600 DKK

2018 **Research travel grant** — Otto Mønsteds Fond, Denmark
Amount: 6700 DKK

2016 **Academic funding** — Garvermester C. W. Gerickes scholarship, Denmark
Amount: 6000 DKK

2015 **Academic funding** — Technical University of Denmark, Denmark
Amount: 6000 DKK

2015 **Academic funding** — Frk. Marie Månssons scholarship, Denmark
Amount: 10000 DKK

2015 **Academic funding** — Otto Mønsteds Fond, Denmark
Amount: 10000 DKK

Other programming frameworks

Probabilistic Programming Languages

PyProb – Contributor
Anglican • Pyro

Machine Learning and Scientific Computing Libraries

PyTorch • TensorFlow • Scikit-Learn • Numpy • SciPy

Andreas Munk

PhD Student,
Computer Science

+1 (604) 771 2899
https://ammunk.com
andreas@ammunk.com

Social Network

in/andreas-munk
ammunk

About Me

I am pursuing a PhD in Computer Science at the University of British Columbia, supervised by Frank Wood. My research areas are probabilistic programming, machine learning, and their application in real-world problems. I am specifically interested in Bayesian inference and (conditional) generative modeling using deep learning and how these two frameworks may be combined by leveraging probabilistic programming.

Programming

0 LOC >10,000 LOC

Python

Julia • Clojure • Matlab

C • C++ • R • Mathematica

HTML 5

LaTeX

Languages

Danish
English
German

Publications

[1] Atilim Güneş Baydin, Lei Shao, Wahid Bhimji, Lukas Heinrich, Lawrence Meadows, Jialin Liu, Andreas Munk, Saeid Naderiparizi, Bradley Gram-Hansen, Gilles Louppe, et al. "Etalumis: bringing probabilistic programming to scientific simulators at scale". In: *Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis*. ACM. 2019, p. 29.

[2] Atilim Gunes Baydin, Lei Shao, Wahid Bhimji, Lukas Heinrich, Saeid Naderiparizi, Andreas Munk, Jialin Liu, Bradley Gram-Hansen, Gilles Louppe, Lawrence Meadows, et al. "Efficient probabilistic inference in the quest for physics beyond the standard model". In: *Advances in Neural Information Processing Systems*. 2019, pp. 5460–5473.

[3] William Harvey, Andreas Munk, Atılım Güneş Baydin, Alexander Bergholm, and Frank Wood. "Attention for Inference Compilation". In: *arXiv preprint arXiv:1910.1* (2019).

[4] Andreas Munk, Adam Ścibior, Atılım Güneş Baydin, Andrew Stewart, Goran Fernlund, Anoush Poursartip, and Frank Wood. "Deep Probabilistic Surrogate Networks for Universal Simulator Approximation". In: *arXiv preprint arXiv:1910.11* (2019).

[5] Saeid Naderiparizi, Adam Ścibior, Andreas Munk, Mehrdad Ghadiri, Atılım Güneş Baydin, Bradley Gram-Hansen, Christian Schroeder de Witt, Robert Zinkov, Philip HS Torr, Tom Rainforth, et al. "Amortized Rejection Sampling in Universal Probabilistic Programming". In: *arXiv preprint arXiv:1910.09056* (2019).

[6] A. M. Munk, K. V. Olesen, S. W. Gangstad, and L. K. Hansen. "Semi-Supervised Sleep-Stage Scoring Based on Single Channel EEG". In: *2018 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*. 2018, pp. 2551–2555. DOI: 10.1109/ICASSP.2018.8461982.