

Andreas M. Munk

Curriculum Vitae

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🐙 github.com/ammunk



Education

- 2018–2022 **University of British Columbia (UBC)**, *Stud. PhD, Computer Science*.
Focus areas: Probabilistic Programming, Machine Learning and AI
- 2016–2018 **Technical University of Denmark (DTU)**, *MSc., Mathematical Modelling and Computation*.
Focus areas: Machine learning and signal processing.
GPA: 11.8/12.
- 2015 **California Institute of Technology (Caltech)**, *International Exchange Student, USA*, duration; one term.
GPA: 3.6/4.0.
- 2013–2016 **Technical University of Denmark**, *BSc. Earth and Space Physics and Engineering*.
GPA: 10.9/12.

Project contributor & Other links

Pyprob contributor: github.com/probprog/pyprob, *PyTorch-based library for probabilistic programming*.
Github: github.com/ammunk.

Skills

Programming

Python • Clojure • Julia • Matlab • R • C/C++ • Mathematica • \LaTeX .

Machine Learning and Scientific Computing Libraries

PyTorch • TensorFlow • Scikit-Learn • Numpy • SciPy.

Data visualization tools

D3.

Familiar with

HTML • JavaScript.

Publications

- [1] Atılım 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] Atılım 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:1910.11961* (2019).

- [4] 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)*. Apr. 2018, pp. 2551–2555. DOI: 10.1109/ICASSP.2018.8461982.
- [5] 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:1910.11950* (2019).
- [6] 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).

Academic Experience and Teachings

Employment

- 2017 **Teaching assistant in "Introduction to Machine Learning and Data Mining", DTU.**
- 2016 **Teaching assistant in "Continuous and Discrete Time Signals", DTU.**
- 2014–2015 **Teaching assistant in "Advanced engineering mathematics 1", DTU.**

Professional Employment

- 2017 **Intern at Canecto, Copenhagen, Denmark.**
In charge of building the company's core machine learning models

Scholarships and Awards

- 2018–2022 **Faculty of Science PhD Tuition Award.**
Amount: 5460 CAD/yr
- 2018–2022 **International Tuition Award.**
Amount: 3200 CAD/yr
- 2018 **IEEE Signal Processing Society (SPS) Travel Grant.**
Amount: 3700 DKK
- 2018 **DTU Compute, Denmark.**
Amount: 7600 DKK
- 2018 **Otto Moensteds Fond, Denmark.**
Amount: 6700 DKK
- 2016 **Garvermester C. W. Gerickes scholarship, Denmark.**
Amount: 6000 DKK
- 2015 **DTU's travel scholarship, Denmark.**
Amount: 6000 DKK
- 2015 **Frk. Marie Maanssons scholarship, Denmark.**
Amount: 10000 DKK
- 2015 **Otto Moensteds Fond, Denmark.**
Amount: 10000 DKK

Languages

English.

Full professional proficiency

German.

Limited working proficiency

Danish.

Native or bilingual proficiency

Other

2010–2012 **Masterclass Physics and Chemistry during high school.**

The Masterclass program is for a few selected students who excel in science in high school

Contact:

Silkeborg High School

2012–2013 **Traveled around the world**, duration: 6 months.

Some of the visited locations; Southeast Asia, New Zealand, Central America and South America