Andreas M. **Munk**

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Education

PhD. (candidate) in Computer Science — *Vancouver, Canada*
University of British Columbia — *2018 - 2023 (expected)*
- Specializing in probabilistic programming and machine learning

MSc. in Mathematical Modelling and Computation — *Copenhagen, Denmark*
The Technical University of Denmark — *2016 - 2018*
- GPA: 11.8/12.0

Exchange Student — *Los Angeles, USA*
California Institute of Technology — *2015*
- GPA: 3.6/4.0

BSc. in Earth and Space Physics and Engineering — *Copenhagen, Denmark*
The Technical University of Denmark — *2013 - 2016*
- GPA: 10.9/12.0

Skills

Programming	Python, Julia, Clojure, Matlab, C/C++, LaTeX
Machine Learning and Scientific Computing Libraries	PyTorch, Tensorflow, Scikit-Learn, Numpy, Scipy
Probabilistic Programming Languages	PyProb (contributor - pending pull request), Anglican, Pyro
DevOps	Docker, Singularity
Languages	Danish (native), English (fluent), German

Experience

CEO — *Vancouver, Canada*
AWAITED AI — *July 2023 – (ongoing)*

Academic Experience and Teachings

Guest lecturer - Graduate Course on Probabilistic Programming — *Vancouver, Canada*
University of British Columbia — *April 14, 2021*
- Topic: Generative Adversarial Networks and Adversarially Learned Inference

NeurIPS top 10% Reviewer
Thirty-fourth Conference on Neural Information Processing Systems — *2020*

AISTATS Reviewer
The 24th International Conference on Artificial Intelligence and Statistics — *2020*

Graduate Research/Academic Assistant — *Vancouver, Canada*
University of British Columbia — *2018–2023*
- Organized reference materials, visual aids and other materials as required by the instructor
- conducted labs, tutorials, discussion groups
- Assisted in administration of examinations
- Graded exams, term papers, assignments and lab reports

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

Teaching Assistant — *Copenhagen, Denmark*
THE TECHNICAL UNIVERSITY OF DENMARK — *2016*
- Course: Continuous and Discrete Time Signals

Teaching Assistant — *Copenhagen, Denmark*
THE TECHNICAL UNIVERSITY OF DENMARK — *2014 - 2015*
- Course: Advanced Engineering Mathematics 1

OTHER

Machine Learning Engineer (internship) — *Copenhagen, Denmark*
CANECTO — *2017 - 2018*
- In charge of building the company's core machine learning models

Presentation

Seminar talk on Probabilistic Surrogate Networks for Simulators with Unbounded Randomness — *Lawrence Berkeley National Laboratory – Berkeley Lab*, *Jan. 2022*
- Introduced the basics of probabilistic programming
- Presented my work on *Probabilistic Surrogate Networks for Simulators with Unbounded Randomness*

Honors & Awards

2018 - 2022 **Faculty of Science PhD Tuition Award**, University of British Columbia — *Canada*
2018 - 2023 **International Tuition Award**, University of British Columbia — *Canada*
2020-2022 **President's Academic Excellence Initiative PhD Award** , University of British Columbia — *Canada*
2016 **Scholarship**, Garvermester C. W. Gerickes scholarship — *Denmark*
2016 **Scholarship**, Technical University of Denmark — *Denmark*
2016 **Scholarship**, Frk. Marie Månssons scholarship — *Denmark*
2016 **Scholarship**, Otto Mønsteds Fond — *Denmark*

Extracurricular Activity

World Roundtrip — *2012 - 2013 (6 months)*
DENMARK→SOUTHEAST ASIA→NEW ZEALAND→CENTRAL AMERICA→SOUTH AMERICA→DENMARK

Hobbies
TENNIS, TABLE TENNIS, PIANO, GAMES, WEIGHTLIFTING

Publications

[1] Andreas Munk, Alexander Mead, and Frank Wood. "Uncertain Evidence in Probabilistic Models and Stochastic Simulators". In: *Proceedings of the 40th International Conference on Machine Learning*. Ed. by Andreas Krause, Emma Brunskill, Kyunghyun Cho, Barbara Engelhardt, Sivan Sabato, and Jonathan Scarlett. Vol. 202. Proceedings of Machine Learning Research. PMLR, July 2023, pp. 25486–25500.

[2] William Harvey, Andreas Munk, Alexander Bergholm, Atılım Güneş Baydin, and Frank Wood. "Attention for Inference Compilation". In: *12th International Conference on Simulation and Modeling Methodologies, Technologies and Applications (SIMULTECH)*. 2022.

[3] Andreas Munk, Berend Zwartsenberg, Adam Scibior, Atilim Gunes Baydin, Andrew Lawrence Stewart, Goran Fernlund, Anoush Poursartip, and Frank Wood. "Probabilistic Surrogate Networks for Simulators with Unbounded Randomness". In: *The 38th Conference on Uncertainty in Artificial Intelligence*. 2022.

[4] Saeid Naderiparizi, Adam Scibior, Andreas Munk, Mehrdad Ghadiri, Atilim Gunes Baydin, Bradley J. Gram-Hansen, Christian A. Schroeder De Witt, Robert Zinkov, Philip Torr, Tom Rainforth, Yee Whye Teh, and Frank Wood. "Amortized Rejection Sampling in Universal Probabilistic Programming". In: *Proceedings of the 25th International Conference on Artificial Intelligence and Statistics*. Ed. by Gustau Camps-Valls, Francisco J. R. Ruiz, and Isabel Valera. Vol. 151. Proceedings of Machine Learning Research. PMLR, Mar. 2022, pp. 8392–8412.

[5] Andreas Munk, William Harvey, and Frank Wood. "Assisting the Adversary to Improve GAN Training". In: *2021 International Joint Conference on Neural Networks (IJCNN)*. IEEE, 2021, pp. 1–8.

[6] Atilim Gunes Baydin, Lei Shao, Wahid Bhimji, Lukas Heinrich, Saeid Naderiparizi, Andreas Munk, Jialin Liu, Bradley Gram-Hansen, Gilles Louppe, Lawrence Meadows, Philip Torr, Victor Lee, Kyle Cranmer, Mr. Prabhat, and Frank Wood. "Efficient Probabilistic Inference in the Quest for Physics Beyond the Standard Model". In: *Advances in Neural Information Processing Systems*. Vol. 32. Curran Associates, Inc., 2019.

[7] Atilim Güneş Baydin, Lei Shao, Wahid Bhimji, Lukas Heinrich, Lawrence Meadows, Jialin Liu, Andreas Munk, Saeid Naderiparizi, Bradley Gram-Hansen, Gilles Louppe, Mingfei Ma, Xiaohui Zhao, Philip Torr, Victor Lee, Kyle Cranmer, Prabhat, and Frank Wood. "Etalumis: Bringing Probabilistic Programming to Scientific Simulators at Scale". In: *Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis*. SC '19. New York, NY, USA: Association for Computing Machinery, Nov. 2019, pp. 1–24. ISBN: 978-1-4503-6229-0. DOI: 10.1145/3295500.3356180.

[8] Bradley Gram-Hansen, Christian Schroeder de Witt, Robert Zinkov, Saeid Naderiparizi, Adam Scibior, Andreas Munk, Frank Wood, Mehrdad Ghadiri, Philip Torr, Yee Whye Teh, Atilim Gunes Baydin, and Tom Rainforth. "Efficient Bayesian Inference for Nested Simulators". In: *Second Symposium on Advances in Approximate Bayesian Inference*. 2019.

[9] 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.