

# Andreas Munk

PhD Student,  
Computer Science

+1 (604) 771 2899

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## Social Network

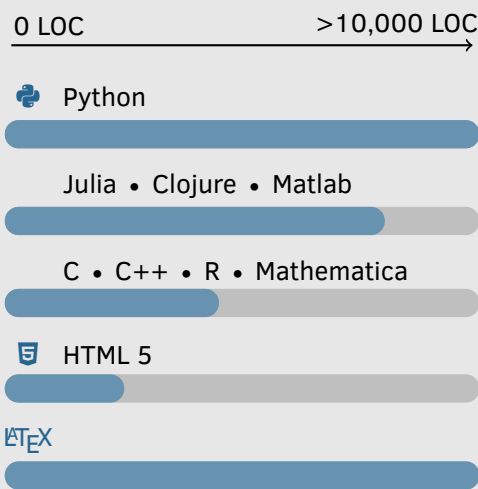
in/andreas-munk

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



## Languages

Danish

English

German

## Education

2018 – 2022 (expected)	<b>PhD. Computer Science</b>	University of British Columbia, Canada
	Focus: Machine learning and artificial intelligence	
2016 – 2018	<b>MSc.</b>	Technical University of Denmark, Denmark
	Mathematical Modelling and Computation (GPA: 11.8/12.0)	
2015 – 2015	<b>Exchange student</b>	California Institute of Technology, USA
	(GPA: 3.6/4.0)	
2013 – 2016	<b>BSc.</b>	Technical University of Denmark, Denmark
	Earth and Space Physics and Engineering (GPA: 10.9/12.0)	

## Working Experience

### Academic Experience and Teachings

2017	<b>Teaching Assistant</b>	Technical University of Denmark, Denmark
	Course: Introduction to Machine Learning and Data Mining	
2016	<b>Teaching Assistant</b>	Technical University of Denmark, Denmark
	Course: Continuous and Discrete Time Signals	
2014 – 2015	<b>Teaching Assistant</b>	Technical University of Denmark, Denmark
	Course: Advanced engineering mathematics 1	

### Industrial Experience

2017	<b>Internship</b>	Canecto, Copenhagen
	In charge of building the company's core machine learning models	

## Scholarships and Awards

2018 – 2022	<b>Faculty of Science PhD Tuition Award</b>	University of British Columbia
	Amount: 5460 CAD/yr	
2018 – 2022	<b>International Tuition Award</b>	University of British Columbia
	Amount: 3200 CAD/yr	
2018	<b>Research travel grant</b>	IEEE Signal Processing Society (SPS)
	Amount: 3700 DKK	
2018	<b>Research travel grant</b>	DTU Compute, Denmark
	Amount: 7600 DKK	
2018	<b>Research travel grant</b>	Otto Mønstedts Fond, Denmark
	Amount: 6700 DKK	
2016	<b>Academic funding</b>	Garvermester C. W. Gerickes scholarship, Denmark
	Amount: 6000 DKK	
2015	<b>Academic funding</b>	Technical University of Denmark, Denmark
	Amount: 6000 DKK	
2015	<b>Academic funding</b>	Frk. Marie Månssons scholarship, Denmark
	Amount: 10000 DKK	
2015	<b>Academic funding</b>	Otto Mønstedts 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

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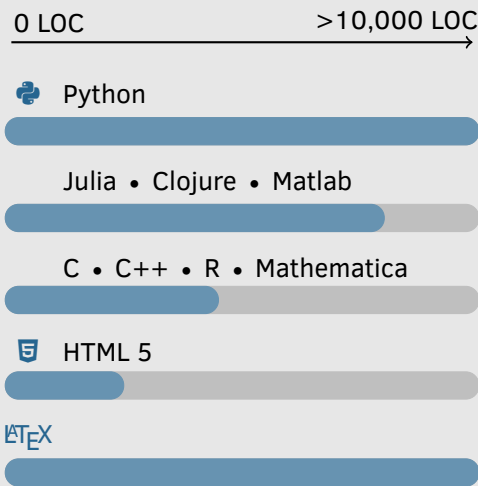
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## Programming



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## 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, Atilim Güneş Baydin, Alexander Bergholm, and Frank Wood. “Attention for Inference Compilation”. In: *arXiv preprint arXiv:1910.1* (2019).

[4] Andreas Munk, Adam Ścibior, Atilim Güneş Baydin, Andrew Stewart, Goran Fernlund, Anoush Poursartip, and Frank Wood. “Deep Probabilistic Surrogate Networks for Universal Simulator Approximation”. In: *arXiv preprint arXiv:1910.1* (2019).

[5] Saeid Naderiparizi, Adam Ścibior, Andreas Munk, Mehrdad Ghadiri, Atilim 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.