

David Eriksson

Curriculum Vitae

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scholar.google.com/citations?user=SWQjkN4AAAAJ

Education

- 2014 – **Cornell University**
2018 *Ph.D. in Applied Mathematics*
• *Thesis*: Scalable kernel methods and their use in black-box optimization.
• TA award in Computer Science, Spring 2016.
• GPA: 4.21/4.0.
- 2012 – **Chalmers University of Technology**
2014 *M.Sc. in Engineering Mathematics and Computational Science*
• GPA: 5.0/5.0.
- 2008 – **Chalmers University of Technology**
2011 *B.Sc. in Mathematics*
• GPA: 4.92/5.0.

Research Interests

Bayesian Optimization, Gaussian Processes, AutoML, Machine Learning, Scientific Computing.

Selected Publications

- High-Dimensional Bayesian Optimization with Sparse Axis-Aligned Subspaces (*UAI 2021*).
- A Nonmyopic Approach to Cost-Constrained Bayesian Optimization (*UAI 2021*).
- Bayesian Optimization is Superior to Random Search for Machine Learning Hyperparameter Tuning: Analysis of the Black-Box Optimization Challenge 2020 (*NeurIPS 2021 Competition Proceedings*).
- Scalable Constrained Bayesian Optimization (*AISTATS 2021*).
- Fast Matrix Square Roots with Applications to Gaussian Processes and Bayesian Optimization (*NeurIPS 2020*).
- Efficient Rollout Strategies for Bayesian Optimization (*UAI 2020*).
- Scalable Global Optimization via Local Bayesian Optimization (*NeurIPS 2019, Spotlight*).
- Scaling Gaussian Process Regression with Derivatives (*NeurIPS 2018*).
- Scalable Log Determinants for Gaussian Process Kernel Learning (*NeurIPS 2017*).

Reviewing

NeurIPS 19-21, ICML 21, AAAI 20, AISTATS 20, ICLR 20, UAI 20-21.

Work Experience

Facebook Research Aug. 2020 – Present
Senior Research Scientist Menlo Park, CA, USA
Machine Learning Researcher

- Research on high-dimensional Bayesian optimization, neural architecture search, and probabilistic models.
- Main organizer of the NeurIPS 2020 black-box optimization competition (bbochallenge.com).
- Developer and open-source contributor to BoTorch and Ax.

Uber AI Labs Jan. 2019 – July 2020
Senior Research Scientist San Francisco, CA, USA
Machine Learning Researcher

- Built and designed Uber's service for Bayesian optimization which tuned thousands of production models in 2019 and 2020.
- Lead author for our NeurIPS 2019 spotlight paper on TuRBO, a scalable high-dimensional Bayesian optimization method.
- Uber AI Quarterly Recognition Award (top 1%).
- Uber Engineering Quarterly Recognition Award (top 1%).
- Two patents on high-dimensional Bayesian optimization.

Google May. 2018 – Aug. 2018
Software Engineering Intern Mountain View, CA, USA
Machine Learning

- (**Google Vizier**) Implemented a Bayesian optimization method.
- Demonstrated that my algorithm outperformed Google Vizier's default on several high-dimensional problems.
- (**Search Click Quality**) Designed an ML model for ad selection.
- Built a library for training and comparing ad selection models.

The MathWorks May. 2017 – Aug. 2017
Software Developer Intern Natick, MA, USA
Surrogate Optimization

- Designed and implemented surrogateopt, an asynchronous surrogate optimization framework in MATLAB.

NASA GSFC June 2011 – June. 2012
Data Analyst Intern & June 2013 – Sept. 2013
Ray Tracing and Mass Loading Greenbelt, MD, USA

- Research on surface loading and atmospheric ray tracing.
- Published two journal articles based on this work.

Open-Source Contributions

- TuRBO (github.com/uber-research/TuRBO).
- pySOT (github.com/dme65/pySOT).
- BoTorch (github.com/pytorch/botorch).
- GPyTorch (github.com/cornellius-gp/gpytorch).