Alexander Alemi

EMAIL: alex.alemi@gmail.com
URL: alexalemi.com
SCHOLAR: google scholar
CV: cv.alexalemi.com
WORK: google deepmind
GITHUB: alexalemi
BLOG: thephysicsvirtuosi.com (0.5M pageviews)
PHYSICS.SE: alemi (second most popular answer)

EDUCATION & EXPERIENCE

2024-present	SENIOR RESEARCH SCIENTIST at Google Deepmind.
2018-2024	SENIOR RESEARCH SCIENTIST at Google Research.
2016-2018	SOFTWARE ENGINEER and Machine Learning Researcher at Google.
2015-2016	POSTDOC at Disney Research, Boston.
2015	PHD in Theoretical Physics, Cornell University. Advisor: Jim Sethna
2015	RESEARCH INTERNSHIP for Google.
2014	CONSULTANT for Disney Research.
2014	INTERNSHIP at Disney Research, Boston. Advisor: Jonathan Yedidia
2012	MS in Physics, Cornell University.
2009	BS in Physics, California Institute of Technology, with honors.

EXPERTISE

Information Theory • Machine Learning • Neural Networks • Bayesian Statistics • Numerical Methods • Python • Condensed Matter Physics

PROGRAMMING

Daily: Python • JAX • (Numpy/Scipy/Matplotlib)

Proficient: Clojure • LaTeX • Mathematica • Nim • Julia • Rust • Go • Javascript • Lua • HTML • CSS • C • SQL • Linux • Git • Vim • TensorFlow

RESEARCH

Current: The Science of Scaling: What's the Limit?

Past: Scaling LLMs • Limits of Large Language Models • Speed Limits for Learning • Methods Beyond Bayes • Infinite Width Networks • Variational Bounds • Out of Distribution Detection • Thermodynamics of Machine Learning • Information Theory and Deep Learning • Alternatives to Bayesian Inference • LLMs • Graph Embeddings • Variational Autoencoders • Variational Information Bottleneck • Image Classification • Classification of the arXiv • Zombie Modelling • Structure of Neural Networks • Smooth Robot Trajectory Optimization • OpenKIM.org Developer • Nonlinear Elasticity of Graphene • Stock Market Structure • Defect Modelling in Atomic Sheets • Elastic Model of Skin Cancer • Nanoelectromechanical Oscillators • Near-field Heat Transfer • Venus' Missing Moon

Ask Me About: Advent of Code • Sounds of Coins • Effectiveness of Speeding • Twitter Compression