

# Alexander Alemi

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URL: [alexalemi.com](http://alexalemi.com)

SCHOLAR: [google scholar](#)

CV: [Curriculum Vitae](#)

WORK: [google ai](#)

GITHUB: [alexalemi](#)

BLOG: [thephysicsvirtuosi.com](http://thephysicsvirtuosi.com) (0.5M pageviews)

PHYSICS.SE: [alemi](#) (second most popular answer)

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## 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: | $\LaTeX$ • 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:         | 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  |