

# Zachary Kenneth Fisher

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Dual citizen of USA and Germany

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## EMPLOYMENT

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**Google DeepMind (formerly Google Research)** *Mountain View, CA*  
Senior Software Engineer *April 2020 –*

Research in machine learning and natural language processing, with focus on large language models for knowledge base construction, natural language reasoning, and reward models for tool use.

**Perimeter Institute for Theoretical Physics** *Waterloo, ON, Canada*  
Postdoctoral Researcher *September 2017 – February 2020*

It from Qubit postdoctoral fellow (Simons Collaboration on Quantum Fields, Gravity and Information).

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## EDUCATION

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**University of California, Berkeley** *August 2012 – May 2017*  
Ph.D. in Physics awarded May 2017. Thesis title: “Entropy Bounds and Entanglement.”

**Massachusetts Institute of Technology** *September 2008 – June 2012*  
S.B. in Physics. Thesis title: “Shuttling of ions for characterization of a microfabricated ion trap.”

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## SELECTED PUBLICATIONS

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Author of seven publications in the field of **machine learning**, including:

- Y. Sheng, S. Gandhe, B. Kanagal, N. Edmonds, **Z. Fisher**, S. Tata, A. Selvan.  
“Measuring an LLM’s Proficiency at Using APIs: A Query Generation Strategy.” KDD-ADS (2024).
- B. Gunel, J.B. Wendt, J. Xie, Y. Zhou, N. Vo, **Z. Fisher**, S. Tata. [cs.CL/2403.19710](#)  
“STRUM-LLM: Attributed and Structured Contrastive Summarization.”
- R. Aksitov, S. Miryoosefi, Z. Li, D. Li, S. Babayan, K. Kopparapu, **Z. Fisher**, R. Guo, S. Prakash, P. Srinivasan, M. Zaheer, S. Kumar. [cs.CL/2312.10003](#)  
“ReST meets ReAct: Self-Improvement for Multi-Step Reasoning LLM Agent.”
- S. Ontanon, J. Ainslie, V. Cvicek, **Z. Fisher**. [cs.AI/2108.04378](#)  
“Making Transformers Solve Compositional Tasks.” ACL (2022).
- J. Ainslie, S. Ontanon, C. Alberti, V. Cvicek, **Z. Fisher**, P. Pham, A. Ravula, S. Sanghai, Q. Wang, L. Yang. [stat.ML/2004.08483](#)  
“ETC: Encoding Long and Structured Inputs in Transformers.” EMNLP (2020).

Author of six peer-reviewed publications in the field of **high-energy physics**, including:

- H. Z. Chen, **Z. Fisher**, J. Hernandez, R. C. Myers and S. M. Ruan. [hep-th/1911.03402](#)  
“Information Flow in Black Hole Evaporation.” Journal of High Energy Physics 3 (2020).
- R. Bousso, **Z. Fisher**, J. Koeller, S. Leichenauer, and A. Wall. [hep-th/1509.02542](#)  
“Proof of the Quantum Null Energy Condition.” Phys. Rev. D 93, no. 2, 024017 (2016).

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## SKILLS

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Python (PyTorch, JAX, TensorFlow, NumPy, SciPy), C++, Mathematica, JavaScript, Apache Beam