

Zachary Kenneth Fisher

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Dual citizen of USA and Germany

EMPLOYMENT

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 agent models.

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).

EDUCATION

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. Physics. Thesis title: “Shuttling of ions for characterization of a microfabricated ion trap.”

SELECTED PUBLICATIONS

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

- R. Aksitov, S. Miryoosefi, Z. Li, D. Li, S. Babayan, K. Kopparapu, **Z. Fisher**, R. Guo, S. Prakash, P. Srinivasan, M. Zaheer, S. Kumar.

“ReST meets ReAct: Self-Improvement for Multi-Step Reasoning LLM Agent.”

To appear (2023).

- S. Ontanon, J. Ainslie, V. Cvicek, **Z. Fisher**. [cs.AI/2108.04378](#)

“Making Transformers Solve Compositional Tasks.”

ACL Main Conference (2022).

- J. Ainslie, S. Ontanon, C. Alberti, V. Cvicek, **Z. Fisher**, P. Pham, A. Ravula, [stat.ML/2004.08483](#)
S. Sanghai, Q. Wang, L. Yang.

“ETC: Encoding Long and Structured Inputs in Transformers.”

Empirical Methods in Natural Language Processing (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).

SKILLS

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