Haimeng Zhao

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Education

Tsinghua University — Beijing, China
Zhili College, B.Sc. in Physics, GPA: **3.98/4.00**, QPA: **4.00/4.00**, Rank: **1/50** — 2020–Current
Selected Coursework (* for audit):

Physics: Feynman's Lectures on Physics, Analytical Mechanics, Quantum Mechanics

Math: Advanced Calculus, Linear Algebra, Complex Analysis, Topology*, Graduate Group Theory*

CS: Machine Learning*, Theoretical Computer Science*, Quantum Computer Science*

Shanghai High School — Shanghai, China
Awards: Outstanding Graduate, Student of the Year (2019) — 2017–2020

Experience

International Center for Theoretical Physics — Trieste, Italy
School Participant — 2021

- The Hitchhiker's Guide to Condensed Matter and Statistical Physics:
  - Machine Learning for Condensed Matter (4 weeks)
  - Topological Phenomena in Condensed Matter (4 weeks)

Publications

[1] **Haimeng Zhao** and Peiyuan Liao. *CAE-ADMM: Implicit Bitrate Optimization via ADMM-based Pruning in Compressive Autoencoders*. 2019. arXiv: 1901.07196 [cs.CV].

Skills

- **Tools:** Git, LaTeX, Shell, Slurm
- **Frameworks:** PyTorch, Keras, TensorFlow, numpy, pandas, scikit-learn
- **Programming:** Python, C/C++, Mathematica, MATLAB

Languages

- **Chinese:** native
- **English:**
  - **TOFEL:** N/A
  - **GRE:** N/A

Projects

See full list of projects on hmzhao.me

- **Ghost Hunter: Neutrino Data Analysis Tournament** — 2021
  First Prize & Most Innovative Algorithm

  (Data Analysis, High Energy Physics Experiment, Jiangmen Underground Neutrino Observatory (JUNO))

  Using various data analysis techniques and machine learning algorithms to promote neutrino energy detection precision of JUNO, a key step towards understanding the neutrino mass ordering problem.

- **CAE-ADMM: Learned Lossy Image Compression** 2019
  arXiv:1901.07196 [cs.CV]

  (Learned Image Compression, Neural Architecture Search, Computer Vision, Deep Learning)

  Introducing ADMM-pruned Compressive AutoEncoder (CAE-ADMM) that uses Alternative Direction Method of Multipliers (ADMM) to optimize the trade-off between distortion and efficiency of lossy image compression.

Scholarships and Awards

- Tsinghua Xuetang Talents Program, Ye Qisun Physics Scholarship 2020–2021
- S. -T. Yau High School Science Award (Computer), Global Gold Prize 2019
- The Awarding Program for Future Scientists, title of "Future Scientist", National Top 3 2019
- Chinese Physics Olympiad, Finalist, Bronze Medal 2019