DANIEL ZHAO

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WORK EXPERIENCE

Quantitative Trader
Old Mission Capital, Options Desk

August 2024 – Present | Chicago, IL

Software Engineer Intern
SpaceX, Starlink Engineering

May 2022 – August 2023 | Hawthorne, CA

- Deployed Transformer-based language model to classify and troubleshoot Starlink support tickets.

Deep Learning Research Intern
NASA Jet Propulsion Laboratory, Science Data Modeling and Computing Group

June 2021 – August 2021 | La Cañada Flintridge, CA

- Designed fast convolutional neural networks in the frequency domain to speed up texture segmentation of 56 TB Mars images by over 10 times.

Astronomy Research Assistant
California Institute of Technology, Yuk Yung Planetary Sciences Lab

June 2019 – Sept 2020 | Pasadena, CA

- Developed algorithm to compute structural similarities between minerals and biological ligands for informatic astrobiology.

SELECTED PUBLICATIONS

Journal Articles

- Zhao, D., Bartlett, S., & Yung, Y. (2020). Quantifying mineral-ligand structural similarities: Bridging the geological world of minerals with the biological world of enzymes. *Life*, *10*, 338.
- Jiang, J., Zhao, D., Ji, X., Xie, B., & Fahy, K. (2021). Revisiting the planet mass and stellar metallicity relation for low-mass exoplanets orbiting gkm class stars. *Universe*, *7*, 88.
- Fan, S., Zhao, D., Li, C., Shemansky, D., Liang, M.-C., & Yung, Y. (2021). Seasonal variations of chemical species in titan's upper atmosphere. *The Planetary Science Journal*.
- Chen, B., Kou, Y., Zhao, D., Wu, F., Liu, S., Chia, A., & Wang, L. (2020). Calculation on stopping time and return period. *Natural Hazards*, *101*, 537–550.

Conferences & Presentations

- Zhao, D., & Pillai, N. S. (2024). Policy gradients for optimal parallel tempering mcmc. *Icml 2024 workshop on structured probabilistic inference & generative modeling*.
- Pearson, K., Noe, E., Zhao, D., Altinok, A., & Morgan, A. (2023). Mapping "brain coral" regions on mars using deep learning. *Ieee 2023 international geoscience and remote sensing symposium*.

SKILLS

Python | Java | Linux | SQL | R | Git | PyTorch | Tensorflow

EDUCATION

A.B. Mathematics and Statistics
Harvard College

Sept 2020 – May 2024

GPA: 3.92, Major GPA: 3.94

Core Coursework:

- Probability
- Statistical Inference
- Data Structures/Algorithms
- Abstract and Linear Algebra
- Real and Complex Analysis
- Algebraic Number Theory
- Algebraic Geometry

Campus Activities:

- Undergraduate researcher @ Natesh Pillai's lab. Reinforcement learning methods for optimizing MCMC convergence.
- Harvard Table Tennis Club, Harvard Poker Club

HONORS

Cum Laude in Field, High Honors
May 2024

NSF GRFP Awardee
Declined

May 2024

USAJMO Qualifier
April 2018

INTERESTS

Chess | Soccer | Cello | Track & Field | Poker Strategy