DANIEL ZHAO

danielzhao@college.harvard.edu | dxczhao.github.io | 818-658-6797 | dxczhao

EXPERIENCE

Software Engineer Intern
SpaceX, Starlink Engineering

May 2022 – August 2023 | Hawthorne, CA

- Built anomaly detection software in production to monitor the health of Starlink assets network-wide.
- Deployed Transformer-based language model to classify and troubleshoot Starlink support tickets.

Deep Learning 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.
- Discovered potential planet-mass stellar-metallicity relationship using data from Kepler Space Telescope and Transiting Exoplanet Survey Satellite.

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, accepted with minor revisions*.
- 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., & Kou, Y. (2020). Analyzing genomic features with predictive chromatin interaction models: A comprehensive evaluation. *Ieee conference on bioinformatics and computational biology 2020*.
- Pearson, K., Zhao, D., Noe, E., & Altinok, A. (2021). Mapping "brain coral" regions on mars using deep learning. *American geophysical union fall meeting 2021*.

SKILLS

Python | Java | Git | SQL | R | Linux | Deep Learning | Algorithms | Statistics

EDUCATION

A.B. Mathematics and Statistics
Harvard College

Sept 2020 – Expected May 2024

GPA: 3.95, Major GPA: 4.00

Core Coursework:

- Probability (Stat 210)
- Statistical Inference (Stat 111)
- Stochastic Processes (Stat 170)
- Data Structures and Algorithms (CS 124)
- Algebra (Math 55a)
- Analysis (Math 55b, 114)
- Number Theory (Math 232, 129, 124)

Campus Activities:

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

HONORS

Qualifier
USA Junior Math Olympiad

April 2018

Five-time Qualifier
American Invitational Math Exam

March 2016 – March 2020

INTERESTS

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