

DANIEL ZHAO

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EXPERIENCE

Incoming Research Intern
Jet Propulsion Laboratory, Deep Learning and Instrument Autonomy
June 2021 – August 2021 La Cañada Flintridge, CA

Research Assistant
California Institute of Technology, Yuk Yung Planetary Sciences Lab
June 2019 – Sept 2020 Pasadena, CA

- Discovered potential planet-mass stellar-metallicity relationship using data from Kepler Space Telescope and Transiting Exoplanet Survey Satellite.
- Developed algorithm to compare mineral-ligand structural similarities in the context of origin of life.

Research Intern
University of Southern California, Lin Chen Biomolecular Sciences Lab
May 2018 – Ongoing Los Angeles, CA

- Built machine learning models in Python predicting the regulatory interaction of gene clusters and structural proteins.
- Analyzed interpretability of machine learning techniques such as neural nets in the context of computational biology.

PUBLICATIONS

Journal Articles

- Zhao, D., Bartlett, S., & Yung, Y. (2020a). 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.
- 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.
- Chen, B., Kou, Y., Wang, Y., Zhao, D., Liu, S., Liu, G., ... Han, X. (2021). Analysis of storm surge characteristics based on stochastic process. *AIMS Mathematics*, 6, 1177–1190.
- Fan, S., Zhao, D., Liang, M.-C., Shemansky, D., & Yung, Y. (2021). Hydrocarbon and nitrile species in titan's upper atmosphere from cassini/uvis stellar occultation observations. *Earth and Space Science Open Archive, Under Review*.

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*.
- Zhao, D., Bartlett, S., & Yung, Y. (2020b). Quantifying mineral-ligand structural similarities. *American geophysical union fall meeting 2020*.

SKILLS

Python C++ Java R
Git AWS/GCP Tensorflow
Linux

Machine Learning Algorithms
Statistical Analysis Research
Problem Solving

EDUCATION

A.B. Mathematics
Harvard College
Sept 2020 – Expected May 2024
GPA: 3.95
Core Coursework: *Statistical Inference (A), Algebra & Group Theory (A), Topology & Analysis (A)*

Diploma
La Canada High School
Sept 2016 – May 2020

GPA: 4.66 (weighted), 3.98 (un-weighted)
ACT: 36/36 | PSAT: 1510/1520

HONORS

Qualifier
USA Junior Math Olympiad
April 2018

Five-time Qualifier
American Invitational Math Exam
March 2016 – March 2020

INTERESTS

Chess Theory Soccer
Track & Field Cello
Classic Rock Poker Strategy