BRANDON GUO

EDUCATION

California Institute of Technology *August 2020 - Present*
B.S., Applied Math and Computer Science
Monta Vista High School *August 2016 - June 2020*
Weighted GPA: 4.67; Unweighted GPA: 4.00/4; ACT: 36

RESEARCH

Bioinformatics Intern at Stanford Department of Medicine *June 2019 - Present*
In Nadeau Lab, used computational network analysis and graph theory on asthma high-throughput gene profiles to uncover biomarkers and disease drivers. Built analysis pipeline using elastic computing and R. Paper invited for presentation at AMIA 2019 conference. First author on resulting publication pending in PLOS.

Research Project at San Jose State University *September 2018 - March 2019*
With Prof. Guangliang Chen, analyzed dimensionality reduction techniques for runtime, effectiveness, and validation accuracy. Built a reduction technique pipeline in Python on lung genomics data. Presented at Joint Statistical Meetings 2019.

Research Intern at University of Pittsburgh School of Medicine *June 2018 - October 2018*
In Zhang Lab, built neural network prediction framework for early prognosis of pulmonary fibrosis using TensorFlow backend. Assisted with hypothesis testing of lab results for resulting paper published in FASEB.

ACHIEVEMENTS

Modeling the Future 2020 Finalist
Led my team to write one of the 7 papers chosen out of 200 for actuarial modeling on agriculture. Implemented robust optimization, Monte Carlo simulation, and regression techniques to forecast weather derivatives and indemnities using Python.

Reviewer for AMIA 2020 Symposium
Invited to serve on review board for proposals in AMIA 2020 conference for peer reviewed publications.

USA Physics Olympiad Bronze Medal
Finished in the top 150 of 400 semifinalists selected nationally based on qualification exam.

PUBLICATIONS

- B. Guo, A. Kaushik, K. Nadeau. **Novel meta-analysis pipeline of heterogeneous high-throughput gene expression datasets reveals dysregulated interactions and pathways in asthma.** *PLOS* (pending). 2020.

- X. Li, et al. **Toll Interacting Protein Protects Lung Epithelial Cells from Bleomycin-Induced Apoptosis.** *FASEB.* 2020.

- B. Guo, G. Chen. **Computational and Theoretical Analysis of Novel Dimensionality Reduction Algorithms in Data Mining.** *JSM Proceedings.* 2019.

SKILLS/CERTIFICATIONS

- Strong with Python, R; Familiar with SQL, Java

- Well-versed in NumPy, Pandas, Keras, etc.

- Deep Learning Specialization (deeplearning.ai)

- Machine Learning Regression (University of Washington)