

Zixuan (Eleanor) Zhang

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EDUCATION

University of Southern California Keck School of Medicine

Expected 06/2024

PhD in Biostatistics

GPA: 3.96/4.0

Columbia University Mailman School of Public Health

05/2020

Master of Science (MS) in Biostatistics

GPA: 4.0/4.3

University of California, Davis

06/2018

Bachelor of Science (BS) in Genetics & Genomics

- Graduated with high honors. GPA: 3.8/4.0

SKILLS

- Software: R, Python, SAS, Linux, HPC, Git & Github
- Relevant coursework: Machine learning, Biostatistics method, Longitudinal data analysis, Deep learning

EXPERIENCES

Department of Population and Public Health Sciences, University of Southern California

01/21-present

Graduate Research Assistant

- Developed a variational Bayesian factor analysis model on genetic association data (FactorGO) to characterize shared latent genetic components among human traits.
- Implemented in python using Just-In-Time (JIT) compiler via JAX package that seamlessly operate on CPU/GPU/TPU.
- Accessed data from google cloud and processed data in R for 29 million genetic variants and 2,483 human traits.
- Validated known biology for human height, rheumatoid arthritis and discover candidate biomarker for prostate cancer.

Department of System Biology, Columbia University Medical Center

09/19-05/20

Graduate Research Assistant

- Created R script to implement a variable threshold association test by gene-specific weighting using sigmoid function.
- Conducted simulation to validate type I error rate and power analysis under various effect size of risk gene in disease traits.
- Demonstrated improved power to identify BMP2 as a known risk gene for pulmonary arterial hypertension disease (PAH).

Department of Mathematics & Department of Pharmacology, UC Davis

07/17-09/17

Undergraduate Research Assistant

- Conducted simulation for a computational model of cardiac arrhythmias using ordinary differential equations in MATLAB.
- Demonstrated the reflected waves under non-excitable “gap” is a function of gap length and stochastic ion channel dynamics.
- Presented poster at *Undergraduate Research Conference at UC Davis 2018*.

PRESENTATIONS

Conference Talk

- **Zixuan Zhang**, Junghyun Jung, Steven Gazal, Nicholas Mancuso. (Oct 26, 2022). “A variational Bayesian approach to characterize pleiotropic components across thousands of human diseases and complex traits using GWAS summary statistics” *American Society of Human Genetics 2022*. (Top conference in human genetics)

TEACHING EXPERIENCE

Department of Population and Public Health Sciences, Keck School of Medicine, USC

08/18/22

Instructor for R bootcamp workshop

- Taught parallel computing in R, linux commands and batch jobs on HPC for 30 students.

Department of Biostatistics, Columbia University Medical Center

09/19-12/19

Teaching Assistant in Biostatistics method and Data science

- Taught biostatistics method including hypothesis testing and linear regression for 90 students.
- Held office hours and provided academic tutoring for homework assignments.

LEADERSHIP AND ACTIVITIES

President, Graduate Society of Biostatistics and Epidemiology (GSBE) at Keck School of Medicine, USC

08/22-Present

- Organized academic and career development events such as book clubs, workshops, and social events.
- Represented our group to give celebration speech for graduation ceremony and welcoming talk for school orientation.