Zixuan (Eleanor) Zhang

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EDUCATION

University of Southern California	**PhD in Biostatistics**	**Expected 06/2024**

- GPA: 3.96/4.0

Columbia University	**Master of Science (MS) in Biostatistics**	**05/2020**

- GPA: 4.0/4.3

University of California, Davis	**Bachelor of Science (BS) in Genetics & Genomics**	**06/2018**

- Graduated with high honors, GPA: 3.8/4.0

SKILLS

- **Programming:** R, Python, Linux, HPC, Git & GitHub
- **Relevant Course:** machine learning, data science, longitudinal data analysis, deep learning

RESEARCH EXPERIENCES

Department of Population and Public Health Sciences, Keck School of Medicine, USC   **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 or GPU.
- Accessed data from google cloud and processed data in R for 29 million genetic variants and 2,483 human traits.
- Found one factor that characterizes comorbidity and known treatment for rheumatoid arthritis.

Department of System Biology, Columbia University Medical Center   **09/19 - 05/20**
Graduate Research Assistant

- Benchmarked a variable threshold association test for rare genetic variants under gene-specific weighting in sigmoid function.
- Conducted simulation in R to show calibrated type I error and power analysis under various effect size of risk gene in case-control study.

Department of Mathematics & Department of Pharmacology, UC Davis   **01/17 - 04/18**
Undergraduate Research Assistant

- Investigated a mechanism of cardiac arrhythmias modeled by ordinary differential equations using simulation in MATLAB.
- Illustrated the number of 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. "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* October *2022*. (Top conference in human genetics)

TEACHING EXPERIENCE

Department of Population and Public Health Sciences, Keck School of Medicine, USC   **08/22**
Instructor for R bootcamp workshop

- Taught parallel computing in R, basic 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 in Data Science

- Taught hypothesis testing and linear regression for 90 students.
- Held weekly office hours and provided guidance to group project

UNIVERSITY SERVICE

President   Graduate Society of Biostatistics and Epidemiology 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 during graduation ceremony and welcoming talk during school orientation.