JINGYOU (ROSE) RAO

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EDUCATION

University of California, Los Angeles   Sep. 2021 – Current
PhD Student in Computer Science (Subfield: Computational Biology)

University of California, Los Angeles   Sep. 2018 – Jun. 2021
Bachelor of Science in Computer Science

Bachelor of Science in Computational and Systems Biology (Concentration: Biological Data Science)

Latin Honors: Summa Cum Laude   Cumulative GPA: 3.978

Coursework: Mathematical Statistics; Linear Algebra; Data Structure; Regression; Machine Learning; Algorithm

RESEARCH

Pimentel Lab (Department of Computational Medicine, UCLA)   July. 2020 – Current
Graduate Student Researcher

Individual Project: Quantifying Uncertainty in Estimation of Isoform Expression Heritability

(Presented a poster in CSHL Genome Informatics Conference 2021)

- Built a random-effects simulation framework for individual-level isoform expression data with various correlation and causation structures in eQTL studies
- Implemented a multi-trait mixed effect model and derived the EM algorithm for isoform expression heritability estimation under the restricted maximum likelihood model

Ozcan Lab (Department of Electrical Engineering, UCLA)   Sep. 2019 – Jun. 2021
Undergraduate Researcher (Direct Mentor: Yi Luo)

Publication: Yi Luo et al. "Quantitative particle agglutination assay for point-of-care testing using mobile holographic imaging and deep learning", *Lab on a Chip* (2021). DOI: 10.1039/d1lc00467k

- Optimized algorithm for reconstruction process for low-quality holography image using MATLAB
- Reconstructed and applied deep-learning neural network to process the holography using TensorFlow on Python
- Fit linear regression between properties of particles on holography on Python

Co-authored Projects (Department of Neurology, UCLA)

ECOA-2. Immuno-sensitization of Glioblastoma to NY-ESO-1 Targeting via Promoter Demethylation (Prins Lab)

- Wrote a single-cell genomics data pipeline with data integration and differential analysis using SEURAT on R

Prognostic Significance of CDKN2AB Loss in IDH-Wildtype Glioblastomas (Lai Lab)

- Conducted Kaplan-Meier and Cox regression analysis on R

Understanding Pseudoprogression in IDH-Mutated Glioma Patients (Lai Lab)

- Created swimmer plots for glioma patient's data visualization on R

LEADERSHIP EXPERIENCE

Tau Beta Pi (national engineering honor society) at UCLA   Jun. 2020 – Current
Academic Outreach Team Officer

- Tutored fellow college students in CS lower division classes for 4 hours per week
- Hosted mathematics review session (linear algebra, calculus) for fellow students 3 times per semester

UCLA Cycling   Sep. 2018 – Jun. 2021
Travel Coordinator & Event Committee Member (Season 2019-2020)

- Arranged the traveling and accommodation of the whole team in the racing season and for the training camps
- Raced for UCLA in Western Collegiate Cycling Conference and won the 2019 individual omnium

Honors: Scholar-Athlete Award 2019 (UCLA Club Sports), Team Spirit Award 2019 (UCLA Club Sports)

SKILLS & ACTIVITIES

Language: Chinese (native), English (working proficiency), French (intermediate)
Interests: Triathlon, Yoga, Rock climbing, Piano