

Yi Jou (Ruby) Liao

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EDUCATION

University of British Columbia (UBC), Vancouver, Canada

Starting 2023/09

- Masters of Science, Genome Science and Technology

University of California, Los Angeles (UCLA), Los Angeles, California, USA

2020/09 - 2022/06

- Bachelor of Science, Computational & Systems Biology, Concentration in Data Science
- GPA: 3.68
- Thesis: "Uncovering Synergistic Paralogues as Druggable Targets"; Advisor: Dr. Thomas Graeber
- Relevant Coursework: Biological Modeling, Bioinformatics, Machine Learning, Probability, Computer Organization, Algorithms & Complexity, Linear Algebra, Differential Equations

De Anza College, Cupertino, California, USA

2017/07 - 2020/06

- Associate in Science, Biological Sciences
- Associate in Arts, Liberal Arts Business & Computer Information Systems Emphasis
- GPA: 3.78, Magna Cum Laude

RESEARCH EXPERIENCE

Computational Research Assistant, UCLA Department of Pharmacology, Los Angeles, CA

2021/09 - Present

Advisors: Favour Esedebe, Dr. Thomas Graeber

- Explored gene enrichment trends and associations with stemness and neuroendocrine signatures between longitudinal matched ovarian cancer patient samples from UCLA
- Constructed a RNA-seq SNP variant calling pipeline to perform phylogenetic tree analysis investigating the relatedness of 59 UCLA patient ovarian cancer samples
- Performed transcription factor analysis to map the landscape of gene co-expression networks and differentially expressed master regulators between pre-therapy and recurrent OV cancer samples
- Executed custom and standard bioinformatics analysis of mass spectrometry metabolomics data for clients and collaborative projects of the UCLA Metabolomics Center
- Co-examined a CRISPR-Cas9 paralog knockout dataset with a drug sensitivity screen using partial least squares regression to explore potential cancer vulnerabilities in paralogous genes
- Mentored undergraduate volunteers and developed training material introducing R usage and basic computational techniques for onboarding members

TEACHING EXPERIENCE

COM SCI M182/CM186 Course Reader, UCLA Samueli School of Engineering, Los Angeles, CA

2021/09 - 2022/06

- Computer Science "Dynamic Biosystem Modeling and Simulation Methodology" courses
- Developed problem solutions and graded homework assignments using LaTeX, MATLAB, and Simulink

BIOL 6A/6C Teaching Assistant, De Anza College, Cupertino, CA

2019/01 - 2020/06

- Supervised labs for two general biology courses through four quarters
- Assisted with lab exercises, grading assignments, and developing lab materials

LEADERSHIP EXPERIENCE

Kitchen Crew Chief, University Cooperative Housing Association, Los Angeles, CA

2022/09 - Present

- Head of the Kitchen Crew in a 400-member university housing non-profit cooperative
- Ensures training and scheduling of 30 kitchen shift leads for all days of the week
- Communicates and resolves conflicts between chefs, shift leads, co-op student governing bodies, kitchen workers, and all members of the co-op
- Analyzes kitchen sign in records using R to improve scheduling and management of worker shifts

Sales Shift Leader, Paris Baguette Cafe, San Jose, CA

2017/06 - 2019/08

- Delegated store tasks to ensure smooth operation
- Trained new hires to integrate workers with workflow
- Computed finances and managed inventory to ensure accurate records
- Correspond between sales workers, bakers, cake makers, and restaurants to arrange catering and special orders

VOLUNTEER EXPERIENCE

Medical Office Building / Hospital Volunteer, Kaiser Permanente, Santa Clara, CA

2018/08 - 2021/07

- Delegated hundreds of patient discharges to escort volunteers as dispatcher
- Trained new volunteers with tours, wheelchair handling, and utilizing computer resources
- Inputted and performed analysis on volunteer escort data
- Provided volunteer service across various areas of the medical center including clinics, the emergency department, and various hospital departments
- Served 540+ total hours

PUBLICATIONS

Esedebe, F. N., Balgovind A., **Liao Y.**, Ochoa C, DiBernardo G., Damoiseaux R., Orsulic S., Singh T, Memarzadeh S., & Graeber T. G. (2022). *Targeting neuroendocrine vulnerabilities in platinum-resistant ovarian cancer*. Manuscript in preparation.

SKILLS

Programming: R (tidyverse, ggplot), Python, Linux/Unix, Shell, Git, SQL, MATLAB, LaTeX, Java, C++
Analysis: PCA, PLSR, CCA, DESeq, GSEA, RRHO, GATK tools, Kaplan-Meier survival analysis