Tony Zhang
Salt Lake City, UT | 385-887-3686
zhanghutony@gmail.com | LinkedIn | GitHub | Portfolio

EDUCATION

Bachelor of Science: Data Science — Salt Lake City, UT
University of Utah | Salt Lake City, UT — Anticipated *December 2026*

Related Coursework: Image Processing, Applied Statistics, Foundations of Data Analysis, Data Science Visualization

TECHNICAL SKILLS

Programming Languages: Python, JavaScript, C++, C#, R, Java
Libraries & Frameworks: PyTorch, TensorFlow, Pandas, Scikit-Learn, D3
Other Technical Skills: Machine Learning/Deep Learning, Data Visualization, Image Processing, Statistical Analysis, Computational Simulations

EXPERIENCE

Student Research Initiative (SRI) — *January 2024 – December 2024*

- Wrote over 20 Python and R scripts for statistical analysis and visualization, allowing for data exploration of cancer biology research projects.
- Worked with a team of 5 researchers in the Judson-Torres lab to analyze melanoma cell interactions and behaviors.
- Investigated statistical modeling techniques to support cancer cell research, contributing insights that refined research hypotheses.
- Developing machine learning models using Python and scikit-learn to classify the quality of melanoma cell tracks gathered from a process known as Quantitative Phase Imaging.

Undergraduate Research Opportunity Program (UROP) — *September 2024 – Present*

- Collaborated with the Reeves Lab Principal Investigator to acquire critical data and worked alongside the Adler Lab to develop computational simulations for exploring tumor heterogeneity.
- Created R simulations to model tumor heterogeneity, providing tools that enhanced the understanding of complex tumor behaviors and their variability.
- Designed and optimized algorithms for high-performance simulations, reducing runtime and improving the efficiency of exploratory cancer research.
- Strengthened expertise in mathematical biology by applying advanced simulation techniques to address pivotal research questions under expert mentorship.

TECHNICAL PROJECTS

Urban Growth Visualization — GitHub Repository

Key Skills: D3.js, Web Development, Data Visualization, JavaScript, HTML, CSS, Data Analysis

- Developed interactive data visualizations of urban growth trends (2012–2024) using D3.js, HTML, CSS, and JavaScript.
- Analyzed urban data factors including housing prices, population changes, job availability, and median income.
- Presented insights through intuitive and dynamic web-based visualizations, enabling informed decision-making for urban planning.

1D Chemokine Gradient Simulation — GitHub Repository

Key Skills: R, Simulation Modeling, Computational Biology, Data Analysis, Tumor Immunology Research

- Implemented a simulation of one-dimensional chemokine gradients in heterogeneous tumors using R.
- Modeled T-cell distribution within tumor environments to replicate observations from squamous cell carcinoma studies.
- Applied computational techniques to analyze spatial organization of Intratumoral immune responses, contributing to advancements in tumor immunology research.