

Tony Zhang
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EDUCATION

Bachelor of Science: Data Science
University of Utah | Salt Lake City, UT

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)
Undergraduate Research Assistant

Salt Lake City, UT
January 2024 – Present

- Wrote over 20 Python and R scripts for statistical analysis and visualization, streamlining data exploration for 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, PyTorch, and scikit-learn, speeding the process of data processing which enhanced downstream analyses.

Undergraduate Research Opportunity Program (UROP)
Undergraduate Researcher

Salt Lake City, UT
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

Do Cell Talk? – Skills used: Python, R, Feature Engineering, Regression

April 2024 – August 2024

- Collaborated with the Judson-Torres lab to analyze melanoma cell interactions and their impact on protein expression, resulting in a better understanding of melanoma dynamics.
- Designed a computational simulation to evaluate mechanisms of cell-cell interactions, contributing insights that informed experimental frameworks.

On the Right Track – Skills used: python, R, classification algorithms

August 2024 – Present

- Visualized and analyzed over 600 Quantitative Phase Imaging data points using Python and R, identifying trends that supported ongoing research studies.
- Applied clustering algorithms to unprocessed Quantitative Phase Imaging data, narrowing down imaging tracks for detailed investigation and labeling, which improved the focus and efficiency of subsequent analyses.
- Built machine learning classifiers with scikit-learn, which classified quality tracks gathered from a process known as Quantitative Phase Imaging.