

ALAN LIU WU

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EDUCATION

University of Pennsylvania

Master of Science in Engineering in Data Science

Philadelphia, PA

Expected May 2026

Rutgers University- New Brunswick

Bachelor's of Science in Computer Science and Data Science, minor in Statistics

New Brunswick, NJ

Sep. 2021 – May 2024

GPA: 4.00/4.00

Awards: Summa Cum Laude, Phi Beta Kappa, Matthew Leydt Society, Paul Robeson Scholar

Activities: HackRU (Team Lead), Rutgers Men's Ultimate Frisbee (President)

TECHNICAL SKILLS

Languages: JavaScript, Python, Java, R, SQL, HTML, CSS

Libraries/Frameworks: React.js, Next.js, Node.js, Tailwind.css Django, Pytorch, Pandas, Numpy, Matplotlib

Developer Tools: Git, MySQL, PostgreSQL, Docker, Azure CLI, Firebase, Expo CLI

EXPERIENCE

Graduate Research Assistant

Wharton School of Business

July 2024 – Present

Philadelphia, PA

- Scraped Yelp, Airbnb, and Amazon Product Data to construct 300+ multi-modal representation sample
- Employed **OpenAI API** on 500 samples to benchmark GPT-4o on unifying and multi-modal representation learning tasks including modality fusion and visual question answering

Undergraduate Research Assistant

Rutgers Cancer Institute of New Jersey

Aug 2023 – May 2024

New Brunswick, NJ

- Scraped data from the Human Microbiome Project using **beautiful soup** and used principal components analysis and non-negative matrix factorization to reduce 2,000 microbes across 18 distinct body sites
- Utilized **Python, matplotlib, seaborn** to build heat maps, cluster diagrams, and survival curves to measure feature statistical significance. Hypothesis tested features with log-rank tests and Kaplan-Meier curves
- Analyzed viability of new DNA sequencing technique for lung cancer prognosis to model patient survival times and outcomes with survival support vector machines (ssvm), and random survival forests on 108 cancer patients
- Tuned L2 strength, learning rate, and kernel of ssvm model with stratified k-fold cv, yielding 0.83 C-Index

Software Engineer Co-Op

ASICS Digital

Jul 2023 – Dec 2023

Boston, MA

- Automated previously manual process to verify metadata overlap with **Python** scripts to inform key design decisions during migration to a new Customer Data Platform. Verified over 2 million records
- Authored and optimized **SQL** queries, assisting in GDPR-user compliant deletion for over 1.7 million customers
- Utilized **Postman API** to A/B test time thresholds for email delivery in a global marketing campaign

PROJECTS

Chinese MNIST Digit Detection App | *Next.js, Fastapi, Pytorch, Docker, Azure*

May 2024 – June 2024

- Deployed full stack web application to accomplish classification of Chinese hand-written digits
- Built custom CNN architecture that achieved validation accuracy of 0.92
- Containerized app with **docker** compose and used **Azure** web services and container instances for deployment

Clinical Heart Failure Bayesian Analysis | *R, RMarkdown, rstanarm, ggplot2*

Nov 2023 – Dec 2023

- Executed bayesian logistic regression techniques, implementing an MCMC simulation-based model to predict patient survival from a dataset of 299 heart failure cases
- Achieved 0.87 accuracy using Bayesian logistic regression model, incorporating prior knowledge
- Applied posterior prediction and prior prediction checks to ensure validity of statistical assumptions

INTERESTS

Hobbies: Cooking, Ultimate Frisbee, Reading, Golf, Learning New Languages, Running