

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: Java, Python, C/C++, SQL, JavaScript, Typescript, HTML/CSS, R

Libraries: Pytorch, Matplotlib, Seaborn, Sksurv, Sci-kit Learn, Numpy, Pandas, Lifelines

Developer Tools: Git, VS Code, IntelliJ, MySQL, PostgreSQL, Docker, Azure CLI

Frameworks: React.js, Next.js, Node.js, Tailwind.css

Software: Microsoft (Excel, Word, Powerpoint), Tableau

Certifications: Machine Learning Specialization (Deeplearning.ai), IBM Data Science Professional Certificate

EXPERIENCE

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
- Employed Metaphlan3 bioinformatic pipeline to profile taxonomy of over 50 samples of 16sRNA sequencing data
- 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 Cox-proportional hazards, survival support vector machines (ssvm), and random survival forests
- 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
- Directed 3 team workshops to elevate team skill sets in **Postman API**, **SFMC integrations**, **Git VCS**

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