Alan Liu Wu

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EDUCATION

University of Pennsylvania, Philadelphia, PA **Expected May 2026**
M.S.E in Data Science
GPA: n/a

Rutgers University- New Brunswick, New Brunswick, NJ **Sep 2021-May 2024**
B.S. in Computer Science and Data Science, Minor in Statistics
GPA: 4.00
Awards: Deans List, Phi Beta Kappa, Summa Cum Laude, Paul Robeson Scholar, Matthew Leydt Society
Relevant Coursework: Linear Algebra, Data Structures, Discrete Structures, Regression Methods, Algorithms, Intro to AI, Bayesian Data Analysis, Statistical Learning, Deep Learning, Machine Learning, Data Wrangling in R

TECHNICAL SKILLS

Programming Languages: Python, R, SQL, Java, C/C++, C#, JavaScript, Typescript, HTML, CSS
Technologies: Pandas, Numpy, Scikit-learn, React.js, Node.js, Pytorch, PostgreSQL, Git, Salesforce Marketing Cloud
Certifications: Machine Learning Specialization (Deeplearning.ai), IBM Data Science Professional Certificate

PROFESSIONAL EXPERIENCE

Software Engineer Co-Op, CRM, ASICS Digital, Boston, MA **Jul 2023-Dec 2023**

- Engineered robust API integrations within SFMC (Salesforce Marketing Cloud), leveraging Python SDK and SSJS for targeted data extraction and processing to drive marketing initiatives towards 500,000+ email subscribers
- Authored and optimized SQL queries, enabling comprehensive data manipulation and analysis, furthering the precision of digital marketing projects such as GDPR-user compliant deletion for over 1.7 million table records
- Directed and facilitated 3 team workshops to elevate team skill sets in Postman API, SFMC integrations, Git VCS

RESEARCH EXPERIENCE

Research Assistant, Rutgers University Cancer Institute, New Brunswick, NJ **Aug 2023-May 2024**

- Composed a comprehensive abundance matrix capturing over 2,000 microbes across 18 distinct body sites from the Human Microbiome Project (HMP), employing Non-Negative Matrix Factorization (NMF) and Principal Components Analysis (PCA)
- Crafted heat maps, cluster diagrams, survival curves, and segmented 100+ patients by cancer stages and cancer treatments, utilizing Kaplan Meier curves and log-rank tests to test statistical significance of 16 categorical features
- Discovered efficacy of novel blood DNA sequencing technique for lung cancer patients by predicting and modeling patient survival time using cox-proportional hazards, survival support vector machine, and random survival forests
- Performed metric selection process for censored samples, ultimately achieving a log-MAE of 0.83 with linear models

Research Assistant, Behavioral Informatics Laboratory, New Brunswick, NJ **Aug 2022-May 2023**

- Designed and implemented a virtual reality questionnaire with 5 distinct question types, collecting and analyzing truthful responses from 30+ individuals to enhance diagnostic processes for drug and video game addiction.

PROGRAMMING PROJECTS

Online Retail Analysis (Jupyter Notebooks, Python, Sci-kit learn) **Dec 2023**

- Conducted comprehensive data preprocessing on an online retail dataset to ensure quality and consistency, implementing RFM (Recency, Frequency, Monetary) analysis to segment 4,000 customers based on purchase behavior
- Developed a Random Forest predictive model, fine-tuned with hyperparameter optimization, achieving a 0.76 R-squared value. This robust model was trained on a dataset with 100,000+ transactions

Clinical Heart Failure Bayesian Analysis (RMarkdown, R, rstanarm) **Dec 2023**

- Executed logistic regression techniques, implementing an MCMC simulation-based model to predict patient survival from a dataset of 299 heart failure cases, enhancing predictive precision in clinical prognostic settings
- Achieved 0.87 accuracy using Bayesian logistic regression model, incorporating prior knowledge and posterior predictions

HackRU Sledge (Javascript, ReactJS, SQL) **Aug 2022-May 2023**

- Designed web application that allows judges to score and rank 250+ submissions to semesterly hackathon at Rutgers
- Deployed 7 front-end features including rating system, judge submission, and form submission using React.js

INTERESTS AND HOBBIES

- Ultimate Frisbee, Cooking, Reading, Learning Languages, Keyboard building, Music, Disc Golf, Golf