

Alan Yang

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EDUCATION

Rice University

Houston, TX

Bachelor of Science in Computer Science and Statistics; Minor in Data Science; GPA: 3.62 Aug 2023 – May 2027

- **Relevant Coursework:** Discrete Math and Algorithms, Data Structures and Programming Design, Programming Languages, Computer Systems, Statistical Machine Learning

TECHNICAL SKILLS AND AWARDS

Languages: Python, R Studio, SQL, Java, JavaScript, C/C++, Dart/Flutter, HTML/CSS, Bash

Frameworks: React, Node.js, RestAPIs, Flask, FastAPI, AWS, JUnit

Libraries: PyTorch, Pandas, NumPy, SciPy, MatPlot, CUDA, dplyr, tidyr, ggplot2, shinyb

Awards: AIME: 9/15, USACO: Silver Division, Wharton Investment Competition: Global Finalists, top 10/1500

EXPERIENCE

Bioinformatics Research Intern

May 2024 – May 2025

Baylor College of Medicine – Waterland Lab

Houston, TX

- Wrote Bash scripts in Linux clusters for whole-genome bisulfite sequencing analysis for over 2 TB of genomic data.
- Developed AI pipelines using GPT-3.5 Turbo API to classify and annotate over 1,700 research papers.
- Built scripts in R to analyze and clean Illumina array datasets for CoRSIV and non-CoRSIV probes and regions.
- Wen-Jou Chang, Uditha Maduranga, Chathura Gunasekara, **Alan Yang**, et al. Human systemic epigenetic variants are implicated in neurodevelopmental and metabolic disorders. Manuscript accepted to Nucleic Acids Research.
- **Alan Yang**, et al. Long-term stability of systemic interindividual epigenetic variants – A major advantage for epigenome-wide association studies in DOHaD. Abstract accepted to the 13th DOHaD World Congress.

Software Development Intern

Aug 2024 – Dec 2024

Nandi Security

Boston, MA

- Built a mobile application using Flutter and Dart to display privacy threats, internet activity, and DNS anomalies.
- Implemented an authentication system with Flask and Google OAuth2 token verification.
- Developed a neural network anomaly detection system using Generative Adversarial Networks (GAN) to detect suspicious DNS activity based on location, time of access, and browsing behavior with 97% accuracy.

Software Engineer Intern

Oct 2023 – Apr 2024

RiceApps

Houston, TX

- Developed a theater management app for the Rice Dance Theatre using MongoDB, Express, React, and Node.
- Built a QR-code ticketing system in React Native to streamline check-ins and reducing entry time.
- Designed and built key system components, including a real-time seat selection interface, event detail page, and a Postgres database to track user reservations and attendance.

PROJECTS

BreakIn | *Python, FastAPI, React, Typescript, Supabase, Stripe*

Apr 2025 – Present

- Developed full-stack AI finance networking platform using React/Typescript and FastAPI. Scaled to \$12,000 ARR and over 500 users.
- Optimized database queries by 80% through single lookup, improving load times from 3000ms to under 500ms.
- Built AI agents/intelligent email automation systems to process over 1000+ concurrent outreach campaigns.
- Engineered real-time auto save system with optimistic updates, reducing UI response time by 100% and eliminating data loss through automatic retry logic, navigation protection, and synchronized database saving.

Checkers Reinforcement Learning | *PyTorch, CUDA, NumPy, Pandas, Multiprocessing*

Oct 2024 – Dec 2024

- Developed a deep reinforcement learning agent using Proximal Policy Optimization (PPO) to play Checkers.
- Used parallel processing to simulate games concurrently across CPU cores, reducing training time by 80%.
- Fine-tuned reward normalization, entropy regularization, and hyperparameters to improve model stability and convergence.