Jonathan Ty

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Education

University of California, San Diego — La Jolla, CA

B.S. in Computer Science, Minors in Cognitive Science and Business Economics — *Sept 2023 – June 2027*

- *GPA*: 3.526 Cumulative — 3.515 Major
- *Certification*: Web Developer Bootcamp, AWS Academy Cloud Foundations
- Awarded distinguished $12,000 Alan Turing Memorial Scholarship for Computer Science leadership and merit.
- Awarded distinguished $18,000 Regent's Scholarship for academic excellence and merit.

Experience

CSE Tutor: Data Structures & Object-Oriented Design — January 2026 – Current

UC San Diego, Computer Science & Engineering — *La Jolla, CA*

- Instructional Assistant for Instructional Assistant team for Professor Paul Cao for WI26, SP26
- Assisted courses covering Data Structures and Algorithms (linked lists, deques, binary trees and hash tables) + object-oriented design with Java
- Analyzed and debugged 400 students' code, graded 500 exams and assignments in the span of 2 quarters

Software Development Intern — June 2025 – Sept 2025

Aimia, multi-agent AI-driven career development platform — *San Diego, CA*

- Designed, developed, and integrated user-facing components and authentication flows in a Next.js/React application, implementing responsive UI and local and cloud-based storage session management
- State management and custom React hooks (useState, useEffect, useRouter) across 15+ modules
- Designed and integrated RESTful API services using Express.js, Mongoose, and JWT: defined MongoDB schema, created backend profile endpoint, built and connected to MongoDB, implemented secure CRUD operations

Undergraduate Research Assistant — Sept 2024 – May 2025

UC San Diego, Computer Science & Engineering — *La Jolla, CA*

- Developed an audio-based method for efficient Human-Activity Recognition (HAR) data collection, reducing annotation time by over 70%
- Achieved 81% validation accuracy on audio-labeled HAR data using LSTM models, outperforming both button-based (56%) and WISDM (62%) baselines
- Built data processing scripts in Python to parse 9-axis IMU sensor data, align with audio instructions, and evaluate model accuracy across labeling modalities

Projects

Study Buddy | *React, Bootstrap, FastAPI, MongoDB, Vite, Axios, Google Gemini* — April – April 2025

- Contributed to frontend development in a 4-person team a full-stack web application for users to upload PDFs and generate AI-powered flashcards and quizzes for personalized learning.
- Designed a responsive Bootstrap interface, featuring dynamic components: flashcards, quizzes, and study pack creation.

Fast Food Voting Analysis | *Python, Pandas, BeautifulSoup, Selenium, scikit-learn* — May – June 2025

- Wrangled 12 datasets, normalizing fast-food franchise counts per state using Pandas, NumPy to build machine learning analyses achieving 0.81 average accuracy in predicting 2024 state voting outcomes from per-capita franchise densities
- Automated web scrapers with SSL handling to extract restaurant totals from Fast Food location directories for reproducible feature engineering.

Technical Skills

Programming Languages: Java, Python, C, C++, HTML/CSS, JavaScript
Developer/Design Tools: Figma, Git, Matplotlib, Numpy, Node.js, Next.js, Pandas, Pytorch, React, SciPy, Scikit-Learn, VS Code
Coursework: *Advanced Data Structures*, *Algorithm Design*, *Artificial Intelligence*, *Machine Learning*, *Operating Systems*, *Practicum in Large-Scale Codebases*, *Recommender Systems & Web Mining*, *Software Engineering*, *User Interfaces*, *Wireless Networks*