Brandon Ng

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EDUCATION

B.S Data Science in Machine Learning and AI **Expected Graduation: June 2026**
University of California, San Diego **GPA: 3.83**
Relevant Coursework: Principles of Data Science, Statistical Methods, Practice of Data Science, Exploratory Data Analysis and Inference, Computer Systems and C, Intro. Data Management, Discrete Mathematics, Vector Calculus, Linear Algebra, Data Structures and Algorithms, Computer Architecture, Probability and Statistics, Theoretical Foundations of Data Science I & II

EXPERIENCES

Headstarter AI | Software Engineering Fellow **July 2024 - Present**

- Currently developing 5+ AI apps and APIs using NextJS, OpenAI, Pinecone, StripeAPI, Gemini, and Firebase
- Coached by engineers from Amazon, and Google, gaining insights into industry best practices and advanced technical skills
- Founding RaveBae, a dating platform designed to connect ravers based on their shared passion for raves and festivals.

CIP4Gov | Full-Stack Software Engineering Intern **Jun 2024 – Present**

- Utilizing ApexCharts to create a dynamic Gantt chart feature for visualizing project timelines and task progressions
- Improving frontend-backend data flow by enhancing the integration between Angular and Django components
- Enhancing a MySQL database for efficient project timeline and budget data management, including export to Excel sheets

Tech4Good Lab | Back-End Web Developer Team Lead **Jun 2023 – Sep 2023**

- Mentored and led a team of 10 novice back-end developers for the development of ExploreCareers, cultivating proficiency in RxJS, Angular, and TypeScript technologies and enhancing team capabilities and individual growth
- Facilitated open communication and collaborated effectively with cross-functional teams to discuss over 10 project designs and milestones, ensuring the successful stitching of over 15 components and efficient management of tasks and goals
- Revamped the website schema and Firebase by creating over 20 new fields and 3 new entities within the database to ensure alignment with the necessary requirements and objectives of the website blueprints

Tech4Good Lab | Back-End Web Developer **Jan 2023 – Jun 2023**

- Utilized dispatch functions and data models to efficiently create and populate data within the Cloud Firestore backend database, creating over 50 entities to test web features and component functionality before launch
- Leveraged and employed RxJs and NgRx functions to create 4 dynamic and interactive UI across multiple webpages and projects, efficiently retrieving, initializing, listening to, and asynchronously updating user data on Firebase
- Refined and enhanced data retrieval for multiple web pages by implementing over 10 asynchronous and 3 selector functions using BehaviorSubjects, Subjects, and Observables, ensuring precise data pipelines through meticulous and rigorous testing

PROJECTS

Plant Disease Detector **Python, PyTorch, Pandas, OpenCV**

- Designed and implemented a CNN architecture using PyTorch, to classify leaf images and detect diseases across plant species
- Optimized data loading and preprocessing pipelines with DataLoaders and CV, improving training efficiency and scalability.
- Fine-tuned and optimized parameters, achieving a 77% accuracy rate in classifying diseases within 38 plant disease categories

PantryPal **Next.js, Firebase, Gemini API, MaterialUI**

- Developed a full-stack web application using Next.js, and Firebase for efficient pantry inventory management and tracking
- Engineered a Firestore data model with optimized CRUD operations for efficient querying and real-time inventory updates
- Engineered a RESTful API endpoint integrating Google's Gemini AI to automate receipt processing, extracting and converting item data from uploaded images into structured, editable information, significantly reducing manual data entry

Culinary Insights **Python, Pandas, Scikit-learn**

- Conducted exploratory data analysis on recipes from Food.com, employing data cleaning techniques and hypothesis testing
- Created a Random Forest clustering model using Scikit-learn to predict recipe healthiness using 8 different nutritional features.
- Leveraged optimization techniques such as grid search to enhance model performance, evaluated using F1 scores, precisions, and recalls to identify opportunities to improve accuracy, stability, and fairness

SKILLS & CERTIFICATES

Programming Languages: Python, JavaScript, TypeScript, HTML, CSS, Java, C/C++, Swift, Assembly, R, SQL, OOP
Libraries: Pandas, NumPy, Matplotlib, Seaborn, Scikit-learn, PyTorch, Tensorflow, BeautifulSoup, Gemini API, OpenAI Vision
Frameworks: Angular.js, React.js, Next.js, Node.js, Firebase, Django, NoSQL
Tools: Git, Github, VSCode, Jupyter Notebook, Docker, Selenium