Elvin Ly

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EDUCATION

Stony Brook University — Stony Brook, NY
Master of Science in Computer Science — *Expected May 2027*
Bachelor of Science in Computer Science, GPA: 3.75 — *Aug. 2023 – May 2026*
- Relevant Coursework: Software Development, Data Structures & Algorithms, Functional Programming, System Fundamentals, Object-Oriented Programming, Discrete Math, VIP 295

EXPERIENCE

Teaching Assistant — Incoming
Stony Brook University – Data Structure & Algorithms — *Stony Brook, NY*
- Assist **150+** students in data structures and algorithms, improving comprehension via office hours and recitation
- Provide constructive feedback on programming assignments, data structures, and algorithm implementation.
- Develop and lead comprehensive review sessions to prepare students for midterms and finals.

PROJECTS

Study Kitty | *TypeScript, React Native, AWS API Gateway, Lambda, DynamoDB, S3, Expo* — May 2025 – Present
- Built a **full-stack** mobile productivity app with gamified focus sessions using **React Native** and **Expo**.
- Designed a **serverless backend** using **AWS API Gateway, Lambda, and DynamoDB**, with local caching strategies for **efficient data flow**, reducing infrastructure costs by **40%** and accelerating app responsiveness.
- Implemented secure authentication by integrating **Clerk** with **AWS Lambda** and **REST API Gateway** authorizers, securely verifying **JWTs**, resulting in protected user data and securing mobile API endpoints.

Digit Classification AI | *Python, TensorFlow, NumPy, OpenCV, Matplotlib* — Jan. 2025
- Developed a deep learning **neural network** using **TensorFlow** and **NumPy** to classify digits with **97%** accuracy
- Preprocessed data by normalizing pixel values and reshaping images, ensuring high-quality model predictions.
- Utilized **OpenCV** to process external images and dynamically predict digits with visualization via **Matplotlib**.

Pantry Pal | *JavaScript, Next.js, React.js, Firebase, GCP, OpenAI LLM, HTML, CSS* — Jul. – Aug. 2024
- Developed a scalable **full-stack web application** enabling users to manage pantry inventory via **Firebase**.
- Engineered **Firebase back-end** for **scalable database** storage with full **CRUD** functionality, improving item management efficiency by **25%** through search and filter queries.
- Integrated **OpenAI's LLM** for image-based ingredient classification and direct import to **Firebase**, additionally powering an **AI chatbot** for personalized recipe recommendations.

MBTIfy | *React.js, JavaScript, HTML, CSS, Spotify API* — Jan. 2024
- Led a hackathon team of 4 in the development of a **responsive full-stack web application** using **React** as the **front-end** and the Spotify API, resulting in **30+** active users in the first month.
- Implemented **Spotify OAuth** to get data from the user's Spotify account, enhancing the user experience.
- Analyzed users' playlists and determined their MBTI personality type through algorithms, and visualized users' Spotify data to show what determined their MBTI such as the level of valence or energy of their songs.

TECHNICAL SKILLS

Languages: Java, Python, JavaScript, TypeScript, SQL, C, HTML/CSS, OCaml
Frameworks & Technologies: React.js, Node.js, React Native, Next.js, Express.js, TensorFlow, NumPy
Cloud & Database Technologies: AWS (Lambda, API Gateway, DynamoDB, S3), Firebase, MongoDB, GCP
Developer Tools & Practices: Git, GitHub, Agile/Scrum, Linux

LEADERSHIP AND AFFILIATIONS

External Public Relations at Asian Student Alliance — Sep. 2023 – Present
- Responsible for increasing engagement for the organization's events and reaching out to brands for sponsorships.
- Developed a program to create a promotion schedule that increased engagement by **15%** via an algorithm.

Mentee at Women in Computer Science — Sep. 2023 – Present
CodePath Member — Sep. 2024 – Present
Stony Brook Computing Society — Sep. 2023 – Present