Joseph Kim

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EDUCATION

University of California, San Diego — San Diego, CA
Computer Science B.S. — *Fall 2024 – Spring 2026*

EXPERIENCE

Undergraduate Research Assistant — November 2024 – April 2025
ESB.AI — *San Diego, CA*
- Conducted research under Dr. Edwin Solares, leveraging drone-based imaging and computer vision models to evaluate avocado tree growth trends, providing insights into agricultural practices and farm productivity
- Developed drone flight simulations using **Gazebo** and **PX4**, testing optimized flight paths, navigating orchard environments, and generating high-quality training data to improve autonomous self-navigation models by **20%**
- Trained AI-estimated bounding boxes in **Label Studio**, correcting errors and establishing higher-quality training datasets to enhance the accuracy of computer vision models, enabling more reliable detection of growth patterns
- Deployed an auto-bounding-box pipeline on the SDSC cluster, reducing avocado-lookalike false positives by **35%**
- Annotated and verified **100+** tree images per week, generating YOLO datasets that improved model efficiency

Developer — February 2024 – June 2024
Blueprint — *Santa Cruz, CA*
- Collaborated with the NPO Sea Otter Savvy to develop and launch the "Sea Otter Savvy" mobile app
- Achieved **100+** downloads on the Apple App Store connecting users to real-time Sea Otter sighting data
- Developed an interactive **GIS** map feature using the **Google Maps API**, custom **React** components, and **Typescript** to visualize sea otter sighting data, allowing users to explore popular hotspots directly within the app
- Integrated web-scraped environmental data into the map view, automatically populating directions to each hotspot, the number of past sightings, and the likelihood of future sightings
- Leveraged **Git** and **GitHub Actions** for CI/CD for collaborative feature branching and maintaining stable builds

Instructor — June 2022 – June 2023
theCoderSchool — *Cerritos, CA*
- Guided students in building full-stack projects including UI/UX design and backend development
- Conducted free trial classes for prospective clients, showcasing class value and increasing trial conversions by **70%**
- Collaborated with parents to provide progress updates and recommendations for optimal student learning

PROJECTS

Concard | *HTML, CSS, JavaScript* — January 2025 - February 2025
- Developed a web-based business card editor with **HTML**, **CSS**, and **JavaScript** that allows users to create and edit custom business cards, then download the finalized designs as JSON, PNG, and JPG
- Built a custom rendering engine using the **HTML Canvas API** to draw layered text, images, and color palettes in real time, reducing export latency by **35%** while maintaining visual fidelity across browsers
- Added responsive UI components using **ARIA** roles to ensure accessibility and a consistent user experience
- Coordinated project planning and task delegation using **GitHub Projects** for prompt deliverables in a team of 11
- Practiced **Agile Scrum methodology** by participating in sprint planning, standups, and retrospectives

Spotify MC | *Python* — March 2024
- Built a Python app integrating the **Spotify API** to announce currently playing songs and artists in real time
- Implemented **OAuth** authentication and API requests to fetch real-time data on the user's active Spotify session
- Integrated the **pyttsx3** text-to-speech engine to announce track titles and artists, creating hands-free playback

Chat Server | *C* — November 2024
- Designed and developed a multithreaded web server, handling reliable and concurrent client connections
- Added **HTTP request** parsing and response generation to support **CRUD** requests and **RESTful** endpoints

TECHNICAL SKILLS

Languages & Frameworks: Python, HTML, CSS, JavaScript, C++, C, Typescript, React.js, LaTeX
Tools & Platforms: Github, Git, Ubuntu, Label Studio, Gazebo, PX4, Excel, Agile/Scrum