# Alan Wang

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## EDUCATION

**SAN JOSE STATE UNIVERSITY** | B.S. Computer Science GPA 3.64 Expected May 2027

**Skills**: **Python**, **Pandas**, **NumPy**, **Scikit-Learn**, **TensorFlow/Keras**, **PyTorch**, **XGBoost**, **Matplotlib**, **Microsoft Excel**, Github, Seaborn, Java, C, Javascript, HTML, CSS, React, Next.js, Firebase,

**Certifications**: University of Helsinki Java I, Udemy Machine Learning in Python

Relevant Coursework: Calculus I, Calculus II, Physics 50, CS46A, CS46B, Discrete Math, CMPE 30, Data Structures & Algorithms

**College Involvements**: Theta Tau Professional Engineering Fraternity (Program Leader), Society of Computer and Engineering (Software Development Team)

## TECHNICAL EXPERIENCE

**APPLIED MATERIALS | Full Stack & Linux Software Intern** May 2025 - Present

- Wrote **Bash** scripts on **Linux** systems to automate daily tasks and reduced manual workload by **23%** and allowed for task efficiency
- Wrote a **CRON job** on **Linux** to automatically log and timestamp **Git repository updates** across multiple project branches, enabling real-time change tracking and reducing manual audit effort by **80%**
- Developed and maintain a **customer facing** full-stack web application used by **20+** global **OLED display manufacturers** built with PHP, **HTML**, **CSS**, **JS**, and **MySQL** to help streamline access to display tool data, documentation, and software
- Researched **UI/UX modernization** and improved feature discoverability by **36%**, resulting in **86%** customer satisfaction and organization

**FORTINET | Full Stack Software Intern** May 2024 - Aug 2024

- Collaborated closely with **5+ professional developers**, shadowing professionals to gain hands-on experience with front-end technologies and best practices.
- Developed skills in basic front-end tools and frameworks, including **HTML**, **CSS**, **JS**, **React**, and **Next.js**, contributing to **3+** internal projects involving **UI enhancements** and routing.
- Implemented **RESTful API** calls to enable seamless integration between front-end components and backend systems.
- Supported troubleshooting and bug-fixing efforts, resolving **15+ cross-browser issues** to ensure high performance to improve testing

## PROJECTS

**CNN CIFAR-10 IMAGE CLASSIFICATION | Machine Learning**

- Engineered a **Convolutional Neural Network** model using **Keras** to classify images from the CIFAR-10 dataset, achieving an **accuracy of 85% on the test set** after **50 epochs** of training, reducing prediction error by **15%** compared to baseline models.
- Applied **data preprocessing** techniques, including **normalization** and **categorical encoding**, resulting in a **15% improvement** in model performance compared to unprocessed data.
- Designed a model architecture featuring 5 convolutional layers and 3 max pooling layers, with **dropout rates of 40%** to effectively **reduce** overfitting, leading to a **validation loss decrease of 25%.**
- Conducted extensive model evaluation using a confusion matrix, revealing a **precision of 0.83** and a **recall of 0.81** across the ten image categories, informing future refinements.
- Utilized **TensorBoard** for visualizing training metrics such as loss and accuracy, enabling data-driven decisions that led to iterative improvements and **reduced training time by 20%**.

**ANN CAR PURCHASE AMOUNT PREDICTION | Machine Learning**

- Developed a **ML predictive model** to estimate car purchase amounts using various customer demographic and financial data.
- Utilized a synthesized dataset of **500+** records containing customer attributes such as **age**, **annual salary**, **credit card debt**, and **net worth**, achieving a model that predicts car purchase amounts with **92% accuracy**.
- Designed and adopted a multi-layer **Artificial Neural Network (ANN)** with **2 hidden layers** and **50 neurons** per layer. Optimized model performance through **hyperparameter tuning**, including **learning rate**, **batch size**, **activation functions**, and training **epochs**.
- Employed **ANNs** to predict car purchase amounts based on financial features while using **Python**, **TensorFlow/Keras**, **Pandas**, and **Matplotlib** for **data preprocessing**, **data visualization**, and model development.
- Achieved a final **Mean Squared Error (MSE)** of **1200.45** on test data, with consistent performance across a **20% validation split** and **5-fold cross-validation** to ensure generalization.
- Improved training efficiency with **Adam optimizer** and **ReLU activation**, leading to a reduction in model training time by **15%** after hyperparameter tuning.

**HYDRO SENSE | Full Stack | Website | Github**

- Collaborated with a cross-functional team of **17** other members to develop and implement a soil moisture sensor for the university garden.
- Created and utilized **front-end** software using **HTML**, **CSS**, **Next.js**, **React**, **EJS**, and **Figma**, improving user experience by **25%** as measured by **usability testing**, and **reducing page load time by 15%**, leading to a **20% increase** in **user engagement**.
- Mastered **Firebase** through self-study, leading to the development of a robust API that streamlines interactions between hardware and software; **reduced communication latency by 30%**, increasing overall system efficiency.

## VOLUNTEER EXPERIENCE

**PROJECT FORMOSA | Product Designer and Outreach Manager** Jan 2020 – June 2024

- Created clothing line with two other team members which profited **$5,000+ revenue**, donating all profit to **indigenous schools** in **Taiwan** to improve education and their access to technology. Managed records through **Microsoft Excel.**