Justin Chen

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Education

University of Maryland Expected May 2027

Double Major: Computer Science - Machine Learning Track and Business Analytics (GPA: 3.9 / 4.0) *College Park, MD*

- **Awards:** Four-Year UMD President's Scholarship ($40,000), HackTJ Winner 2023 (300+ participants), HooHacks 3rd Place 2024 (750+ participants), Bitcamp Winner 2024 (600+ participants), Appian Hackathon Winner 2025

Experience

Appian June 2025 – Aug 2025

Software Engineer Intern *Mclean, VA*

- Deployed and maintained production-grade **Kubernetes** clusters in **AWS** using **Python**, **Terraform**, **Go** and **Helm**
- Improved network architecture for distributed systems with **Kubernetes** and **Terraform**, cutting server load by **18%** .
- Led an update to critical **Karpenter** operator features, making server balancing more efficient and reducing costs by **$11,000** annually
- Developed and fine-tuned a Retrieval-Augmented Generation (**RAG**) **AI** agent leveraging a custom knowledge base to interpret code and automatically generate context-aware update recommendations, reducing documentation update time by **60%**.

General Dynamics Mission Systems May 2024 – Aug 2024

Software Engineer Intern *Manassas, VA*

- Engineered and sustained **Java**, **C++**, and **Python** software for US Navy data collection and transmission systems
- Designed a **Bash** script to verify media (drive partitioning, encryption, filesystems) on **thousand**s of drives to test Johns Hopkins research data.
- Upgraded software to utilize **Java NIO** for file I/O operations on digital records, resulting in a **50%** speed increase
- Performed Fortify **static code analysis** to identify and implement fixes for **30+** identified code weaknesses in C++

J&J Camp June 2021 – Aug 2023

Computer Science Instructor *Herndon, VA*

- Designed and delivered programming curriculum to students concentrated in Python.

Projects

Dance Computer Vision Analyst – HooHacks 3rd Place Hackathon Finish | *Python, OpenCV, SQL, YOLO*

- Utilized frame-by-frame **computer vision** analysis on YouTube videos retrieved from Google **API** to extract key body positions stored as landmark coordinates into **data frames**.
- Deployed a live overlay feature capable of superimposing any YouTube dance onto a webcam feed using **pandas** dataframe processing for coordinate positions, **SQL** querying for accessing coordinates, and a self-trained **YOLO AI model** for centering overlay onto a person, and **cv2** to plot and display points onto webcam feed.

Machine Learning Color Detection Program | *Python, NumPy, OpenCV, Sckit-learn*

- Architected a **machine learning** driven color detection system, employing Gaussian Mixture Models trained on a diverse dataset of over **100 images**, optimizing **15** critical model parameters.

AI Stock Market Pattern Analysis Trading Bot | *Python, SQL, PyTorch, Pyplot*

- Leveraged **AI** and **pattern recognition algorithms**, coupled with **SQL** database querying, to perform comprehensive analysis of stock market data. Used **data visualization** graphs to provide users with user-friendly data analysis

Computer Vision Mouse Program (Helping Hands) – HackTJ 1st Place Hackathon Finish | *Python, NumPy, OpenCV*

- Developed a **computer vision** application in **Python**, enabling cursor control through intuitive hand motion tracking.

University Class Finder (Connective) – Bitcamp 1st Place Hackathon Finish | *Python, Flask, React, HTML/CSS*

- Developed a website to connect students enrolled in the same class using Selenium to web scrape class schedules.
- Utilized **HTML, CSS, JS**, and **Rest API** to integrate seamless front-end and back-end communication of the website.

Technical Skills

Languages: Python, Java, C, C++, Bash, Go, SQL, JavaScript, HTML, CSS, React, OCaml, Rust, Flask, R, MATLAB
Technologies: Kubernetes, Terraform, AWS, Docker, React, Flask, Linux, Git, Fortify Static Code Analysis
Relevant Coursework: Artificial Intelligence, Machine Learning, Algorithms, Object-Oriented Programming, Computer Vision, Data Science