

# 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 **thousands** 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, Scikit-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