

# Garret Castro

LinkedIn: [www.linkedin.com/in/garret-castro](https://www.linkedin.com/in/garret-castro)

Website: [thevanadium.github.io/portfolio](https://thevanadium.github.io/portfolio)

Email: [garretcastro0728@gmail.com](mailto:garretcastro0728@gmail.com)

## EDUCATION

**Enrolled at the University of California Merced, Merced, CA**

Bachelor of Science, Computer Science and Engineering - Chancellor's Honor List, GPA **3.684**

Expected Graduation **Fall 2025**

## TECHNICAL SKILLS

**Languages:** Python, HTML/CSS/JS, Typescript, C++, SQL, Java

**Frameworks/Libraries:** React, Angular, Flask, OpenCV

## RESEARCH

**SupHerb Crop Yield Estimation (August 2024-Ongoing)** (OpenCV, Python, React)

- Directing as team lead in using a rover to take RGB-D images of cilantro to estimate harvest weight
- Collecting and processing cilantro image data for model training using a Farm-ng Amiga's React interface
- Developing a computer vision model using OpenCV to calculate the weight of the harvest
- Eliminating the need for human prediction by increasing the precision of automatic crop yield estimation

**Capstone Team Formation Tool (August 2024-Ongoing)** (Python, Numpy, Pandas, React)

- Developed a novel skills-based and preferences-based algorithm to assign students to group projects
- Automated data input via parameterization to work on more datasets with less user input
- Optimized algorithm by eliminating unnecessary computations, decreasing runtime by 50%

## PROJECTS

**UC Merced GE Badge Finder** (React, Flask, REST API)

- Developed a web application that finds every UC Merced course with given GE badge criteria
- Utilized web scraping to collect course data and converted it into a REST API
- Eliminated the need for login/navigation, reducing the course identification process to seconds

**Minecraftle** (Flask, Javascript)

- Contributed to the upkeep and enhancement of a browser game for over 600,000 players
- Fixed game-breaking bugs, allowing win and loss conditions to be calculated as intended
- Resolved inconsistencies in the game's high contrast mode, facilitating play for colorblind users

## AWARDS/CERTIFICATES

AP Scholar with Honor

*Demonstrated exemplary college-level achievement through Advanced Placement Exam performance*

CompTIA Security+ 601 Certified

*Demonstrated expertise in securing IT systems, identifying and mitigating security threats, and implementing robust security measures to safeguard sensitive information*