

# John Zeng

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## EDUCATION

### Purdue University

*Bachelor of Science*

- Double Major: Computer Science and Artificial Intelligence
- GPA: 3.3

West Lafayette, IN

*Expected May 2026*

## EXPERIENCE

### Computer Vision Researcher

*Digital Enterprise Center*

March 2024 – Present

*West Lafayette, IN*

- Leading a team of two to build a **computer vision** model to identify foreign objects in an assembly space.
- Utilized multiprocessing image augmentation to generate synthetic data, effectively addressing the challenges posed by a short-staffed team.
- Implemented an automated documentation process that triggers when changes to Python modules or workflow instructions are made, leveraging **GitHub Actions** and **Pages** to maintain an up-to-date, accessible API documentation [site](#).
- Developing an interactive GUI using **PySide** and the **Qt** framework to display camera input from three sources, as an orthographic projection. The interface enables users to select regions of interest for each camera view, within which the computer vision model detects foreign objects.

### Head Teaching Assistant for Advanced + Regular Programming

*The Harker School*

Summer 2024

*San Jose, CA*

- Taught lessons in memory allocation, object and data-type basics, recursion, and coding standards.
- Provided clarification to junior TAs for ambiguous assignment instructions and grading rubrics.
- Led review sessions to explain frequently missed test questions and difficult concepts.

### Teaching Assistant for Advanced Programming

*The Harker School*

Summer 2023

*San Jose, CA*

- Tutored students in object-oriented-programming and Java fundamentals.
- Graded physical exams as well as projects.

### Investment Analyst Intern

*Draper Dragon*

Summer 2022

*San Mateo, CA*

- Researched **metaverse/blockchain gaming** space and presented to general partners about the nuanced differences in industry leaders' platform designs along with their respective drawbacks and benefits.
- Wrote two investment [memos](#) detailing company financials, market opportunity, risk factors, platform/product description, competition, valuation, company history, and team history.

## PROJECTS

### Rugby Drill Simulator | *Textual, Python*

June 2024 – Present

- Building a TUI that simulates a rugby passing drill based on user controlled parameters using the Textual framework.
- Tracks player oscillation between lines with the goal of discovering a formula to yield 0 oscillations over 200 passes.

### Shell | *Lex, Yacc, C++, Cmake*

April 2024

- Created a shell interface capable of executing commands with subshell, if statements, while loops, script execution, and wildcarding in addition to all basic terminal commands like pipes, environment variables, and file system traversal.

### Git Tutorial | *Markdown*

March 2024

- Educated inexperienced developers on the basics of Git.
- Covered topics such as cloning, branching, committing, and pushing.
- Provided examples of common problems like merge conflicts and possible solutions along with links for further research.

## TECHNICAL SKILLS

**Languages:** Python, C, C++, Java, HTML, CSS

**Frameworks:** Textual, Qt, Ultralytics, Tensorflow/Keras, Pytorch, ClearML

**Libraries:** OpenCV, Imgaug