

# Yu Da

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## EDUCATION

### Cornell University

Ithaca, NY

*Bachelor of Arts and M.Eng. in Computer Science, Minor in Math, GPA: 3.72*

*Expected Graduation: May 2025*

- Relevant Courses: Analysis of Algorithms and Data Structures, Machine Learning, Computer Vision, NLP, Robot Learning, Stochastic Process, Numerical Analysis, Linear Algebra, Combinatorics, Econometrics

## SKILLS

**Programming Languages:** Python, Java, Ocaml, C, JavaScript, HTML, SQL, R

**Libraries:** NumPy, PyTorch, Qiskit, detectron2, openCV, PIL, Scripy, pandas, Flask, Opensim

**Tools:** Docker, Stata, Figma, Rhino, Adobe Creative Suite

**Languages:** Chinese, English, Korean(intermediate)

## EXPERIENCE

### Machine Learning Engineer Intern

May 2023 – Aug. 2023

*KPF*

*New York, NY*

- Designed and trained an ensemble computer vision model using YOLO and Mask2Former for image segmentation in scenes with varying numbers of object instances, ranging from tens to hundreds
- Revised loss and evaluation functions in Mask2Former, adapting the baseline COCO evaluator for elevator segmentation in architectural drawings to enhance task-specific model performance
- Implemented Non-Maximum-Suppression for task-specific duplicate removal, increased the F1 score by 23% on a custom dataset
- Fine-tuned ViT model from hugging face for floor plan classifications, improving the F1 score by 12% on a custom dataset

### Research Assistant

May 2024 – Sep. 2024

*Emprise Lab*

*Ithaca, NY*

- Collected and processed motion trajectories from motion capture cameras in user studies to train an autoencoder that represents joint limitations, enabling assistive robots to adapt their policies
- Converted raw motion capture data to anatomical joint angles, enhancing the accuracy and applicability of motion data in clinical settings
- Created 3D animations to reconstruct motions from clinical joint angles, providing visual tools for better cross-validation and interpretation of motion data

### Undergraduate Teaching Assistant

Aug. 2021 – Present

*Cornell University*

*Ithaca, NY*

- Held review sessions, office hours, and discussions for over 400 students on machine learning and RISC-V CPU organization, reinforcing students' understanding of the course material and projects

## PROJECTS

### NLP models | Python, PyTorch

Sep. 2023 - Nov. 2023

- Developed part of a masked transformer-based autoregressive Language Model and fine-tuned it from the pertained weights on customized datasets for generating humorous responses given descriptions
- Constructed an ensemble model using an LSTM encoder-decoder framework with an attention layer for semantic role labeling.
- Built a named entity recognition model using Hidden Markov Chain model, Maximum Entropy Markov model, and RNN, achieving an F1 score of 0.7, 20% improvement over the baseline model

### Anabel's Grocery | Python, Flask, SQL

<https://github.com/yuuuuuu0276/AnabelsGrocery-Backend> May 2023

- Deployed backend routes on Google cloud for a grocery online-ordering and recipe-sharing app
- Managed the inventory and user-uploaded image storage in AWS S3
- Coordinated with two IOS front-end developers to design route API for renderings

### Crazy Arcade | Ocaml

<https://github.com/AmyCui2333/3110-FinalProject> Mar. 2021 – May 2021

- Collaborated with 2 partners to build Crazy Arcade from scratch using functional programming
- Designed and tested all graphics and animations needed in the game based on the capability of the existing graphic libraries