

BRANDON (YIFAN) YANG

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EDUCATION

University of Virginia, School of Engineering and Applied Sciences, Charlottesville, VA

May 2025

- **B.S. in Computer Science**, GPA: 3.87 / 4.00
- **Awards**: UVA Dean's Engineering Research Scholarship (**Top 30** students), [VTHacks11 Winner](#) (**3rd Place**)
- **Relevant Coursework**: Advanced Software Development, Data Structures & Algorithms, ML, RL, Optimization, Theory of Computation, Computer Systems Organization (**Lab Lead TA**)

SKILLS

Programming: Python, Java, JavaScript, TypeScript, C, Git, Bash

Tools: Express, Django, Flask, React, Bootstrap, CI/CD, Heroku, Docker, MongoDB, SQL, PyTorch, OpenCV, ROS

Skills: Software Development, Agile/Scrum, Backend Development, AI/ML, NLP, RL, Computer Vision, Robotics

EXPERIENCE

AI/ML Research Intern, *UVA Link Lab*, Charlottesville, VA

May 2023 – Aug 2023

- Developed **AI** image editing tool GLOMA, achieving **50%** increase in image feature similarity and **36%** improvement in FID score, surpassing existing models.
- Employed **Docker**, **HPC Cloud**, **OOP**, and **Test-Driven Development** (TDD) in GLOMA development, refactored codebase for enhanced scalability, achieving **30%** boost in inferencing time.
- Integrated **NLP** and **Diffusion** components by fine-tuning language, vision models using **Python**, **PyTorch**, Hugging Face **Transformers**, leading to **80%** increase in image generation accuracy.
- Led GLOMA development as **primary contributor** in team of 3, demonstrating leadership, initiative, and effective collaboration.
- Pioneered integration of GLOMA into Goal-Conditioned **RL** (GCRL) tasks, enhancing robots' ability to understand and act on human textual instructions.
- **Presented** at multiple research symposiums; submitted work for **RSS 2024** (Robotics Conference), currently under review.

Research Assistant, *Collaborative Robotics Lab*, Charlottesville, VA

May 2022 – Present

- Innovated **5** new robotics tasks in IsaacGym codebase, integrating over **40** modules using **Python**, **CUDA**, **PyTorch**, resulting in **50%** reduction in training time and **70%** leap in system scalability.
- Engineered Robot Tool-Grasping System, incorporating **deep learning**-based object detection algorithm using **AprilTag** and **ROS**, achieving **95%** accuracy rate in tool identification and selection, showcased demos at multiple workshops.
- Spearheaded research in Multi-agent Reinforcement Learning (MARL), developing Sequence Learning Algorithm that boosted offline MARL task efficiency by **20%**.

LEADERSHIP

Lab Lead TA, *Computer Systems Organization*, Charlottesville, VA

Jan 2023 – May 2023

- Delivered concise and engaging **10-minute presentations** in **C programming** and **x86-64** architecture during weekly labs, facilitating understanding of complex computer system topics for **80+ students**.
- Collaborated with course staff in biweekly meetings to identify areas for improvement and implemented changes to enhance course content for **500+ students**.

PROJECTS

Sneaker Recommendation System | *JavaScript, Python, TensorFlow* ([GitHub](#))

- Developed personal sneaker recommendation system using **JavaScript** and **MongoDB**, leveraging **ML**, content and collaborative filtering, achieved model accuracy of over **80%** across **2,500+** distinct sneakers.
- Engineered **deep learning** recommendation engine with **TensorFlow** Recommenders, deployed via **Python** and **Flask**; optimized system algorithms, reducing training time by **20%**.
- Built **REST API** with **Node.js** and **Express.js**, integrated **Flask** microservices, and ensured security via **JWT**. Designed dynamic UI with **React**, enabling real-time data retrieval through Axios.

SmartOH | *JavaScript, TypeScript, Python, PyTorch* ([GitHub](#))

- Co-developed **AI-driven** platform to optimize TA-student office hour interactions, implementing real-time data processing and user-friendly dashboards using **JavaScript** and **TypeScript**.
- Led development of AI Q&A and question similarity detection with **BERT** and **PyTorch**, which reduced student queue times by **40%** by allowing students with similar questions to be helped at once.
- Created automatic pipeline for session summarization and TA feedback to students in **Python** by generating LaTeX-formatted PDF leveraging Google Cloud and OpenAI API's text processing capabilities.
- Enhanced user experience with custom UI design by architecting full-stack application using **Node.js**, **Express**, and **FastAPI** for backend communication, **React** for dynamic front-end rendering.