Junnan Shimizu

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Tarrytown, New York
GitHub Profile
LinkedIn Profile

Education

Colby College | Waterville, Maine — *Class of 2025*

Bachelor's in Computer Science with a Concentration in AI — **Current GPA: 3.56**

- Division III Track and Field; NESCAC All-Academic
- Jazz Ensemble, Wind Ensemble

Relevant Coursework:

- Data Structures and Algorithms
- Deep Learning
- Operating Systems
- Mobile Software Development
- Human Centered ML
- Computer Organization
- Database Design & Deployment
- Data Analysis & Visualization
- Computer Graphics

Technical Skills

Programming Languages: Python, Java, Kotlin, C++, SQL, HTML/CSS, JavaScript

Libraries: TensorFlow, PyTorch, Keras, Firebase, NumPy, Pandas, JetPack Compose, MatPlotLib, ROS2, WebGL

Technologies: Git/GitHub, Linux, Android Studio, LaTeX, Jupyter Notebook, VSCode, VHDL

Work Experience

INSITE Lab — *May 2024-Present*

Research Engineer — Colby College | Waterville, Maine

- Researched assistive technologies to enhance spatial awareness and safety for visually impaired individuals utilizing Boston Dynamics' Spot quadruped robot.
- Utilized **Python**, **TensorFlow**, and **YOLOv7** to develop a real-time machine learning object detection model, achieving classification accuracy of over **95%**.
- Developed a **computer vision** system enabling adaptive movement, data collection, and communication of essential environmental information using **Python**, drastically increasing safety for visually impaired users.

Colby College Computer Science — *February 2022-Present*

Teaching Assistant — Colby College | Waterville, Maine

- Evaluating over 200 students in **Data Structures and Algorithms**, **Object-Oriented Programming**, and **Computer Organization** coursework, and providing individual constructive feedback to foster continuous improvement.
- Solely provided technical support for the computer science department of over 500 students, addressing Windows operating system and PC-related issues.

Applied Computational Robotics REU — *June-August 2023*

Research Engineer — Texas A&M University | College Station, Texas

- Developed a Radar Dynamic Object and Camera Detection Fusion project in an 8-week NSF-funded research program, collaborating with a PhD student on their thesis in autonomous vehicle applications.
- Optimized the data collection process for object detection by utilizing **Python** and **Robot Operating System 2 (ROS2)** to process millions of points of sensor data from camera and radar systems.
- Implemented a real-time object detection model (YOLO) and a grid-based DBSCAN clustering algorithm to identify objects and their attributes, improving the decision-making process and safety of autonomous vehicles.

Interactive Media Lab — *May-August 2022*

Research Assistant — Colby College | Waterville, Maine

- Combined functionality of 3D projectors, Intel's RealSense technology, and Allolib, a library for interactive multimedia application development, to create a space that facilitates learning and significantly promotes active recall.
- Engineered augmented reality, background subtraction, and depth visualization features utilizing **Python** and **C++** to improve the immersive and interactive user experience.

Projects

Sirianni Study App — ***Kotlin, Jetpack Compose*** — Source Code

- A **full-stack** Android app implementing the Sirianni study method to facilitate long-term memory retention.

Reddit Word Trends — ***Java*** — Source Code

- A program that parses thousands of Reddit comments and determines trends in the data.

Free Speech Canvas Website — ***HTML, CSS, JavaScript*** — Source Code

- A website where users have the freedom to draw/erase anything on a shared canvas – a symbol of freedom of speech.