Lisul Elvitigala

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Education

Stony Brook University Expected Graduation: May 2027

Bachelor of Science, Computer Science *GPA: 3.81/4.00*

- Relevant Coursework: Data Structures & Algorithms, Discrete Mathematics, Graph Theory, Linear Algebra, Computational Geometry, Functional Programming, Object Oriented Programming, Probability & Statistics

Experience

Clever Devices June 2025 – Aug 2025

Software Engineer Intern

- Enabled real-time entry and exit detection for 200+ vehicles by developing a 99.9% uptime C# tracker system.
- Reduced data retrieval latency 85% by integrating a lower-load SQL script to backend vehicle API microservice.
- Developed Python fuzzing tool that generated 250+ synthetic POST payloads across 10 threads, uncovering 5 unhandled exceptions in a fault-tolerant vehicle REST API; containerized with Docker, charted with Splunk.

Princeton CUbitsAI Lab Dec 2024 – May 2025

Undergraduate Researcher

- Authored paper on automated prompt-to-video pipeline, producing 30s video outputs for CUbits using Python.
- Architected Q&A platform for 30+ permissioned students using React, Tailwind, Node, MongoDB, MySQL.
- Constructed user validation for discussion forum using React, Firestore database integration via Firebase API.

Cloud Data Pro June 2024 – Aug 2024

Software Engineer Intern

- Built version manager for internal tools by creating web application using CRUD framework in ASP.NET Core.
- Engineered a scalable Python automation script on Azure, accelerating Portuguese translation speed by 500%.
- Implemented CI/CD pipeline with Kubernetes for Docker deployments from Artifactory using JWT on Azure.
- Restored 99.9% uptime by developing SQL hotfix to patch broken stored procedure, deploying to live system.

Projects

Autonomous Maze Navigation Robot | *C++, C, CMake, Python, Raspberry Pi*

- Engineered a Raspberry Pi to autonomously navigate a 16x16 unexplored maze using motors and sensor I/O.
- Integrated BFS and Dijkstra algorithm maze logic by leveraging C++ and C, simulating 250% speed increase.
- Developed projector-built maze tests in Python, allowing 500+ runs over 20+ mazes; synced with simulator.

CNN-Powered Object Detection Robot | *Java, Python, Pandas, PyTorch*

- Built a CNN using Python (PyTorch, Pandas) on 3,500+ Gaussian-smoothed images for game-piece detector.
- Decreased autonomous robot overshoot by over 70% by integrating detector using Coral to Java framework.

CUDA-Accelerated Robotic Arm Control | *C++, CUDA, OpenCV, Jetson, Python, PyTorch*

- Developed 6-DoF arm control using Python, recording 1,000+ imitation learning demos training ML policies.
- Integrated PyTorch inference with CUDA on Jetson Orin Nano, reducing latency from $\sim$120ms to $<$50 ms.
- Achieved OpenCV preprocessing and hybrid C++ modules, decreasing actuation delay 20% across 50+ tests.

Skills

Programming Languages: Python, C++, C#, C, Java, JavaScript, HTML, CSS, OCaml
Frameworks and Libraries: Node, MongoDB, Express, React, Tailwind, Pandas, Flask, ASP.NET Core
Tools: Git, Jenkins, Jira, AWS, Linux, Docker, Firebase, SQL, NoSQL, Excel, Splunk, REST API
Concepts: Backend Development, Frontend Development, Fullstack Development, Software Engineering, Robotics Engineering, Machine Learning, Networking, CI/CD, Microservices, DevOps, Automation, Agile