

# Lisul Elvitigala

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## EDUCATION

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### **Stony Brook University**

Stony Brook, NY

*Bachelor of Science in Computer Science, Minor in Applied Mathematics*

*Expected Graduation: May 2027*

- **Grades:** 4.0 GPA (Credits: 44 Completed & 15 In Progress of 120 Total)
- **Awards:** Dean's Honor Roll, Presidential Scholarship
- **Coursework:** Graph Theory, Combinatorics, Data Structures, Algorithms, Programming Abstractions, Applied Linear Algebra, Discrete Mathematics

## EXPERIENCE

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### **Micromouse Algorithms' Lead**

Sep. 2024 – Present

*Stony Brook University (IEEE Lab)*

*Stony Brook, NY*

- Integrated new A\* and Trémaux's algorithm to increase mouse maze traversal times by 45% over 50 simulations
- Saved team \$500 by replacing physical maze building with software solution: developed program to accurately project maze images onto floor using Python and modular 3D print walls/connectors
- Converted 370 mazes stored in text files to images using Pillow. Integrated with projector software
- Decreased physical mouse turning/movement lag by 80% by introducing PID controls and feedforward
- Developed new object-oriented programming code base: initially created in Java, converted to C++ for better performance in robot. Added documentation and presented code to team of four developers and four builders

### **Undergraduate Research Assistant**

Dec. 2024 – Present

*Stony Brook University (COMPAS Lab)*

*Stony Brook, NY*

- Developing neoMantis with team of five graduate students in Rust, creating new large-scale sequence-search index
- Cutting RNA sequencing experiment times by a projected 30% compared to previous Mantis system
- Added maintainable Ansible playbooks and custom scripts in JavaScript and Bash, reduced system setup time by 40% across 10 worker nodes
- Authored 10 to 15 hour onboarding curriculum that decreased new researcher matriculation time by nearly 60%

### **Freelance Website Developer**

Aug. 2024 – Present

*Online/Remote (RCOBCEA.org)*

*Syosset, NY*

- Developed responsive website using WordPress and custom CSS for Royal College alumni network
- Integrated back-end event registration page for Royal Charity Ball 2025 using TicketSpice. Registered around 200 alumni for the event, raising \$36,000 for the nonprofit
- Migrating WordPress content to fully HTML/CSS static webpage using GitHub Pages, developing dynamically updated back-end using ReactJS

## PROJECTS

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### **BrainLink: Q&A Platform for Undergraduates** | *JavaScript, ReactJS, HTML/CSS*

June 2023 – Jan. 2024

- Worked with team of five undergraduate students, presented project to two professors at Rutgers University
- Implemented automatic back-end username and password storage for 35 users using Firebase API with Node.js
- Integrated npm by using Create React App bootstrap to deploy a live development server: allowed for hot reloading website

### **FIRST Robotics Competition (FRC) Team 9016** | *Java, Python, Gradle, Git*

Sept. 2022 – Aug. 2024

- Served as lead programmer: developed swerve, pneumatics, elevator, vision, and intake/outtake subsystems code
- Implemented robot position estimation software for autonomous routine: trained neural network on around 3500 game piece photos on Google Coral in camera vision; received Autonomous Award at Hofstra Regional 2024
- Placed 1st out of 49 teams at FRC Long Island Regional 2024, 29th out of 74 teams at FRC World Championships
- Awarded Highest Rookie Seed, Rookie All-Star, and 2x FRC World Championship Team Qualification

## TECHNICAL SKILLS

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**Languages:** Java, Python, C/C++, Rust, JavaScript, HTML/CSS

**Framework and Libraries:** ReactJS, Node.js, npm, WordPress

**Developer Tools:** Git, Google Cloud Platform, Visual Studio, Android Studio, XCode, Gradle, Microsoft Office