Lisul Elvitigala

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Education

Stony Brook University — Stony Brook, NY
Bachelor of Science in Computer Science — *Expected May 2027*

- GPA: 4.0/4.0
- Honors: Dean's List, Presidential Scholarship
- Relevant Coursework: Data Structures and Algorithms, Functional and Object-Oriented Programming, Graph Theory, Linear Algebra, Discrete Mathematics

Experience

Undergraduate Research Assistant — Dec. 2024 – Present
COMPAS Lab, Stony Brook University — *Stony Brook, NY*

- Developing 'neoMantis' sequence-search genomic indexing system in Rust that reduces RNA sequencing time by 30% compared to the previous Mantis implementation
- Reducing infrastructure setup time by 40% across 10 nodes by implementing Ansible playbooks with custom JavaScript and Bash automation
- Authored concise data science curriculum that decreased researcher onboarding time by 60%
- Collaborated to optimize genomic data pipelines for improved Mantis system efficiency and throughput

Micromouse Algorithms & Embedded Systems Developer — Sep. 2024 – Present
IEEE Lab, Stony Brook University — *Stony Brook, NY*

- Improved maze traversal speed by 45% over 50 simulations by integrating A* and Trémaux's algorithms in C++
- Reduced mouse movement overshoot by 80% by implementing PID controllers with feedforward prediction
- Developing Python projection-based simulator to replace physical maze construction and material costs
- Building sensor translation system that converts encoder, gyroscope and ToF data into real-time simulation inputs

Lead Programmer — Sep. 2020 – May 2024
FIRST Robotics Competition Team 9016 — *Syosset, NY*

- Implemented neural network-based computer vision with ∼3500 training images that enabled position tracking
- Designed end-to-end robot control systems that helped secure 1st place (of 49 teams) at Long Island Regional 2024
- Designed autonomous navigation routines that contributed to 29th place (of 74) finish at World Championship
- Trained team members on command-based framework, reducing their learning curve from weeks to days

Projects

BrainLink: Academic Q&A Platform | *React, JavaScript, Firebase* — Dec. 2022 – Sep. 2023

- Built full-stack educational platform prototype using React that could handle 35 simultaneous users
- Implemented secure user authentication system through Firebase API with Firestore database integration
- Established real-time database connectivity for instant updates to user account settings
- Configured continuous deployment pipeline with Netlify that streamlined the development workflow

FutureGro Inc. | *ASP.NET Core, MySQL JavaScript, HTML/CSS* — Jun. 2022 – Present

- Established 501(c)(3) environmental education organization that expanded to 5 states with 30+ active members
- Secured $120,000/year Google Ad Grant and technology sponsorships through effective grant writing
- Built ASP.NET Core task management system that tracked 50+ tasks of which distributed 1000+ volunteer hours
- Designed hydroponic demonstration kits that educated 50+ students at community environmental events

RCOBECA Alumni Portal | *WordPress, React, HTML/CSS* — May 2023 – Aug. 2023

- Developed responsive WordPress website with custom CSS modifications that improved alumni engagement
- Integrated TicketSpice event registration system that processed $36,000 in transactions for ∼200 attendees
- Improved site performance by 65% by migrating from WordPress to static HTML/CSS with React backend
- Built custom content management interface that allowed non-technical staff to update website independently

Technical Skills

Languages: Python, Java, JavaScript, C#, C++, Rust, OCaml, HTML, CSS, SQL
Frameworks and Libraries: ASP.NET Core, React, TensorFlow, Node.js, Entity Framework, Firestore, Django, Flask
Technologies: Visual Studio, Git, Docker, Azure, GitHub Actions, Gradle, Netlify, Firebase