

Ka Long Ngai

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Education

SUNY Stony Brook University

Bachelor of Science in Computer Science

Awards: Outstanding Academic Awards (3x recipients), Dean List (3x recipient)

Relevant Coursework: Systems Fundamentals I/II, Fundamentals of Software Development, Data Structures & Algorithms

Expected Graduation May 2026

GPA: 4.0/4.0

Experiences

Cohesive Robotics

Software Engineer Intern

Brooklyn, NY

June 2024 - August 2024

- Enhanced the HMI for a smart finishing robotics workcell using C++, improving UI logic, reducing clicks, and increasing user experience by 30%
- Performed regression and system integration testing on a ROS2-based 6-axis robotic arm, reducing failure risk by 10% through bug fixes and added unit tests
- Maintained a 50k-line C++ and Python codebase, migrated to a newer LTS framework, and improved code by rewriting illogical sections and simplifying implementations with advanced data structures and algorithms
- Implemented linters and formatters like clang-tidy, cpp-format, and cpp-linter, improving code safety, performance, and readability by 20%

Residence Hall Association

RHA Senator

Stony Brook, NY

September 2022 - May 2024

- Engaged in two weekly meetings which provided engaging activities for the hall's residents with over 100 attendees
- Facilitated effective communication between Residence Hall Association and Hall Council to ensure seamless and smooth events
- Participated in debates using Robert's Rules to select the most qualified individuals for 10 elections

Projects

[Charla Chat Server](#)

April 2024 - May 2024

- Developed a chat server to handle user requests (login, logout, send messages, view users) using a thread-based server model for efficient user communication and management
- Used C as the primary language, PThread, semaphores, and mutexes to ensure reliable execution in a multithreaded environment

[Fake Stack Overflow](#)

November 2023 - December 2023

- Created a web app replicating 15 Stack Overflow features with a secure RESTful API, implementing bcrypt and express sessions to protect user accounts and ensure confidentiality for 100% of API requests
- Used React.js for Front End Framework; Node.js, Express.js for Backend Framework; MongoDB for Database

[Spotify Shuffle Algorithm](#)

January 2023 - March 2023

- Developed an optimized shuffle algorithm for Spotify playlists, improving listening experience by 30% through analysis of listening habits and runtime efficiency
- Used Java as the primary language, Node.js and Bash to retrieve and update data using Spotify API

[Weather Report Bot](#)

October 2022 - November 2022

- Produced a Bot that generates weather reports based on user-specified locations using their text input in the 3rd party software Discord, therefore increasing the accessibility of weather reports for users by 30%
- Used JavaScript as the primary language, Node.js framework, using Discord API to obtain user input

Technical Skills

Languages: Java, C++, C, Python, JavaScript, TypeScript, Bash, SQL, Lua, OCaml

Web Technologies: HTML5, CSS3, React.js, Node.js, Express.js, Next.js, RESTful APIs, JSON, bcrypt, React Router

Other Technologies: Qt, ROS2

Databases: MySQL, MongoDB, SQLite

Tools & Platforms: Git, Github/Gitlab, Docker, Unix/Linux, AzureCloud, Roblox Studio

Methodologies: Design Pattern, Agile, Waterfall, SCRUM, Software Engineering, DevOps, CI/CD