SUNNY CARLIN QI

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EDUCATION

COLUMBIA UNIVERSITY, THE SCHOOL OF ENGINEERING AND APPLIED SCIENCE — **NEW YORK, NY**

BACHELOR OF SCIENCE, COMPUTER ENGINEERING — *EXPECTED MAY 2026*

- Cumulative GPA: 3.96/4; Dean's List (all available semesters)
- Relevant Courses: Computer Systems, Advanced Programming, CS Theory, Discrete Mathematics, Circuits Analysis, Multivariable Calculus, Differential Equations, Linear Algebra

NEW YORK UNIVERSITY, TANDON SCHOOL OF ENGINEERING — **NEW YORK, NY**

COMPUTER ENGINEERING (COMPLETED FIRST YEAR OF ENGINEERING STUDIES) — *SEPTEMBER 2022 – MAY 2023*

- Cumulative GPA: 3.92/4
- Relevant Courses: Data Structures and Algorithms, Object Oriented Programming

EXPERIENCE

COLUMBIA WIRELESS & MOBILE NETWORKING LAB — **NEW YORK, NY**

RESEARCH INTERN — *JUNE 2024 – AUGUST 2024*

- Tested mmWave capabilities for environment sensing using a 140GHz transmission device, comparing results to a **LiDAR** imaging system
- Conducted field tests of 28GHz signal transmission in diverse indoor and outdoor environments to assess **5G** performance
- Developed **NumPy** and **Matplotlib** scripts to visualize the relationship between antenna gain and varying environment types
- Designed and 3D-printed custom components in **Fusion 360** to securely attach circuit boards to a data collection device

COLUMBIA FORMULA SOCIETY OF AUTOMOTIVE ENGINEERS — **NEW YORK, NY**

MEMBER OF THE POWERTRAIN AND HIGH VOLTAGE DIVISIONS — *SEPTEMBER 2023 – MAY 2024*

- Revised accumulator to relocate digital ports (e.g USB) and include an LED indication system using **Solidworks**
- Designed accumulator support tabs to endure static, sheering, and turning stresses with a minimum factor of safety of three
- Conducted **Solidworks** stress simulations on support tabs accounting for various forces (e.g. gravitational) and racing conditions
- Prototyped portable power supply containment system to provide convenient and accessible vehicle refueling

RAPID ASSEMBLY AND DESIGN PROJECT — **NEW YORK, NY**

HEAD OF PRODUCTION — *SEPTEMBER 2022 – DECEMBER 2022*

- Led engineering team to devise marketable product of hand-held assistive cleaning device called the 'AutoScrub' to enhance accessibility of traditional cleaning chores for individuals with mobility difficulties
- Leveraged **TinkerCAD** to map principal circuit design, subsequently employing **Arduino** to program the physical circuits for scrubbing power and timer controls
- Designed, printed, and assembled a protective CAD chassis with **Fusion 360** to contain electronic components for the AutoScrub

PROJECTS

TOMOTALK JAPANESE LEARNING ASSISTANT — *AUGUST 2024 – OCTOBER 2024*

- Utilized **OpenAI API** to implement an interactive Japanese conversation partner and teaching chatbot
- Implemented a **full stack** web application with a **Python** backend and **React** frontend to create a chat interface with an array of functionality (translation, question generation, flashcard creation, etc.)
- Integrated an **Firebase** database to handle data storage and retrieval for user conversation histories and flashcards

HTTP WEB SERVER — *APRIL 2024 – MAY 2024*

- Programmed a **C**-based **HTTP** 1.0 web server utilizing socket programming that enabled clients to post and retrieve messages
- Implemented robust GET request parsing system with error handling, ensuring server is protected against various client failures
- Created a Makefile for efficient compilation of the project, ensuring streamlined builds and cleanup processes

INTERACTIVE WEB-BASED BLACKJACK GAME — *JUNE 2024 – JULY 2024*

- Developed Blackjack as an interactive, web-based game using **JavaScript** and **HTML**
- Implemented a dynamic betting system and the ability to split card hands to accurately replicate the classic game

ADDITIONAL INFORMATION

Languages: Mandarin (Native), Japanese (Novice)

Programming Languages and Technologies: Autodesk Fusion 360, Solidworks, Ansys, Python, C, C++, Java, React, HTML, JavaScript, MATLAB, NodeJS, UNIX, Numpy, Flask, Postman, Arduino, Raspberry Pi, Godot, Vim, Git, MSSQL, Firebase

Interests: Piano, Music Production, Skiing, Tennis, Video Games, Art Museums, Anime, Sci-fi novels, Japanese-Learning