

Michael Li

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Education

2019–2023 **Brown University**, *Sc.B, Computer Science and Music*, Providence, RI, *ongoing*.
GPA: 3.90

Fall 2022	CS1570 Design and Analysis of Algorithms	Spring 2021	CS0320 Intro. Software Engineering
Fall 2022	CS1300 User Interfaces and User Experience	Spring 2021	MATH0520 Linear Algebra
Fall 2022	CS1805 Computers, Freedom and Privacy	Spring 2021	APMA1650 Statistical Inference I
Spring 2022	CS1420 Machine Learning	Fall 2020	CS0330 Intro. Computer Systems
Spring 2022	CS1470 Deep Learning	Spring 2020	CS0160 Intro. Algorithms and Data Structures
Fall 2021	CS1650 Software Security & Exploitation	Spring 2020	CS0220 Intro. Discrete Structures and Probability
Fall 2021	CS1730 Design and Implementation of Programming Languages	Fall 2019	CS0150 Intro. Object-Oriented Programming

2015–2019 **High Technology High School**, Lincroft, NJ.

Work Experience

Jun–Aug 2022 **TIP Software Engineering Intern**, *Capital One*, Chicago, IL.

Led a full-stack intern project to develop an internal tool to assist in generating configuration files/pre-set file structures and reading and writing from databases. Used React and Flask with Python to develop the application, which uses questionnaires and an API to programmatically generate/use configuration data.

Jun–Aug 2021 **Machine Learning Intern**, *Merck*.

Used Camelot library to write a Python OCR script that parses data from English and Chinese PDFs into organized Excel spreadsheets. Researched and tested various PDF table extraction tools (Camelot, pdfplumber, Azure Form Recognizer) in virtual Python environment.

Feb 2021–present **Student Manager**, *Brown University IT Service Center*, Providence, RI.

Answers IT help tickets and chats as a member of the ITSC at Brown University. Troubleshoots technology used around campus and provides technical support to both staff and students. Manages shifts, logistics, training, and hiring of other technical assistants.

Aug 2020 **Website Designer**, *abacus counselling*.

As sole web developer, used React to design and launch a website for abacus counselling, a startup that provides college advising for students in Sri Lanka.

Projects

Nov 2022 **Tablator**, <https://tablator.herokuapp.com/>.

Used Python to develop a dynamic programming algorithm that finds the three best guitar fingering paths for a given input sequence of notes or midi file. Built a frontend for the application in React.

Oct 2022 **LOL Outcome Predictor**.

Used Tensorflow with Python to develop a deep learning model to predict the outcome of a League of Legends game based on the characters the players choose. Wrote scripts for scraping and manipulating large amounts of API data, and built a frontend for the application in React.

Apr 2022 **Fixing JPEG Artifacts**, *CS1470 Deep Learning*.

Used Tensorflow with Python to develop a convolutional neural network designed to remove blocking artifacts from JPEG images, achieving higher quality than JPEG compression while preserving file size, using peak signal-to-noise ratio (P-SNR) and structural similarity index measurement (SSIM) as metrics.

Apr 2021 **Spothouse**, *CS0320 Intro. Software Engineering*, <https://spothouse-app.herokuapp.com/>.

Used ReactJS and Spark Java to create a webapp that allows a group of people to share a Spotify queue. Users search for songs and request to add them, as well as upvote/downvote songs to modify the queue order. Users have voting power proportional to the upvotes on their songs.

Nov 2019 **ChordConstructor**, *CS0150 Intro. Object-Oriented Programming*.

Used JavaFX to create a program that, given a key and roman numeral selected by the user, displays the appropriate chord on a treble clef staff and plays the chord out loud.

Skills

Programming	Java, Python, C, Jenkins, Docker, Flask, Spark Java, AWS, Tensorflow, Unix/Linux, RESTful APIs, Machine Learning, Deep Learning, x86-64 Assembly, React, HTML, JavaScript, CSS, SQL, Racket, Agile, L ^A T _E X, LilyPond
Mathematics	multivariable calculus, discrete mathematics, probability, statistics, linear algebra