

# William Ma

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## INTRODUCTION

I am an open-source contributor to a package manager for macOS, an experienced iOS developer working on an on-campus dining app, and an academic student interested in compilers, computability theory, and algorithms.

## EDUCATION

### CORNELL UNIVERSITY

BS, COMPUTER SCIENCE  
Expected May 2022 | Ithaca, NY  
College of Engineering  
Dean's List (3 semesters)  
GPA: 4.3

**ARLINGTON HIGH SCHOOL**  
2014 - 2018 | Lagrangeville, NY

## COURSEWORK

### COMPUTER SCIENCE

Analysis of Algorithms, Compilers, Functional Programming, Object-Oriented Design and Data Structures, Theory of Computing, Discrete Structures

### BUSINESS

Financial and Managerial Accounting, Macroeconomics

### MATHEMATICS

Linear Algebra, Multivariable Calculus

## TECHNICAL SKILLS

### PROFICIENT

Swift, Java, OCaml, Xcode, UIKit, Animations with UIKit, Core Data, Core Location, MapKit,  $\LaTeX$ , Git, Vim, Ubuntu

### EXPERIENCED

Objective C, Python, Verilog, HTML, CSS, Android Studio, Web Development, Nginx, VMware ESXi

## ACTIVITIES

Cornell University Glee Club

## HOME BREW

### OPEN-SOURCE CONTRIBUTOR

THE MISSING PACKAGE MANAGER FOR macOS (OR LINUX)

SUMMER 2020 — PRESENT

- **Unified 8 brew and brew cask commands; Added cask support to 3 brew commands**
- **Added license information to 50% (ct.  $\approx$  2500) of homebrew-core packages**
- Part of the inaugural MLH Fellowship
- *Github*: <https://github.com/homebrew>
- *Technologies*: Ruby, Rspec, DSLs

## EATERY

### IOS DEVELOPER & PROJECT MANAGER

FIND FOOD AT CORNELL

FALL 2018 — PRESENT

- **Grew user base by 20% during 2019**
- **7,200 Monthly Active Users, 2,500 Daily Active Users**
- Created interactive bar-chart view for Popular Times feature
- Architected and implemented a large feature: Collegetown Eateries
- Implemented design changes; refactored legacy UI code
- Collaborated on a team with iOS, Android, backend developers, as well as designers and marketers
- *Github*: <https://github.com/cuappdev/eatery>
- *Technologies*: iOS, Swift 4.2, UIKit, Apollo

## XI COMPILER

COMPILER FOR IMPERATIVE LANGUAGE INTO x86 ASSEMBLY

SPRING 2020 FOR CS 4120

- **Implemented dataflow analysis optimizations: Register allocation, copy propagation, dead code elimination, loop unrolling**
- **Developed test suite with unit tests, performance tests, and integration tests.** Used code coverage tools throughout development.
- Built lexing with JFlex, parsing with CUP, type-checking, syntax-directed IR generation, dataflow-based optimization, ASM generation with tiling
- Used visitor pattern for AST to MIR to LIR translation
- *Technologies*: Java, JUnit testing, Gradle, gdb, JFlex, CUP

## CELLO MUTE

### INDEPENDENT IOS APP

THE TOOLS MUSICIANS NEED, ALL IN ONE

SUMMER 2016

- **39K Downloads**
- Designed both the UI and the icons used throughout the app
- Illustrated marketing material used on the App Store.
- *Github*: <https://github.com/whoiswillma/Cello-Mute>
- *Technologies*: AudioKit, UIKit animations