Matthew Gharrity

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EDUCATION

Cornell University
Bachelor of Arts, December 2017
Computer Science, *summa cum laude*
GPA 4.12 (4.3 scale)

COURSEWORK

Computer Science
Advanced Systems
Advanced Algorithms
Compilers
Operating Systems
Distributed Computing
Machine Learning
Databases
Parallel Computing
Honors OO Design and Data Structs
Functional Programming

Informally Audited
Advanced Programming Languages
Systems Principles

Math
Linear Algebra
Multivariable Calculus
Combinatorics
Probability

MISC

Tools
C++, C, Java, Kotlin,
Git, Unix/Bash, LLVM, JVM

Interests
Compilers, language tools,
performance and optimization

Links
mattgharrity.com
github.com/gharrma
linkedin.com/in/gharrma

EXPERIENCE

Google | **Staff Software Engineer** 2023 – Present
Senior Software Engineer 2021 – 2023
Software Engineer 2018 – 2021

- Tech Lead, Android Studio IDE Platform team, Mountain View, CA
- Promotions: joined 2018 → L4, 2019 → L5, 2021 → L6, 2023
- Designed and released *IDE Perf*, an IntelliJ performance analysis tool used at both Google and JetBrains: *github.com/google/ide-perf*
- Gave a talk on Android Lint at Android Dev Summit: *youtu.be/ffH-LD5uP4s*
- Optimized Android Lint performance: *link.medium.com/ppyrkiQEPV*
- Contributed fixes and optimizations in the Kotlin IDE plugin

Competitive Programming

- ACM-ICPC World Finalist, 2017
- Bloomberg Global CodeCon Finalist, 2017, 2018
- 1st place, Microsoft College Code Competition at Cornell, 2017
- Maintained a code library at *github.com/gharrma/contest-library*

Research Project | JLang 2016 – 2018

- Paid work with Prof. Andrew Myers while studying at Cornell
- Added an LLVM backend to the Polyglot compiler, supporting ahead-of-time compilation for Java 7
- Co-authored most translations: dynamic dispatch, exceptions, arrays, enums, local classes, etc., and implemented most of the Java Native Interface (JNI)
- Released at *github.com/polyglot-compiler/JLang*

Google | SWE Intern (x2) Summer 2016, 2017

- Android Studio: shipped a whole-program thread annotation analyzer
- Android Runtime: developed a register allocator that reduced code size by 3%, and identified areas of improvement for the existing allocator

Course Consultant 2015 – 2016

- Honors Object-Oriented Design and Data Structures (1 semester)
- Operating Systems with Practicum (1 semester)

iD Tech | Instructor Summer 2015

- Led a Java programming class with eight high school students each week

Notable Course Projects

- Compilers practicum (A+): translated strongly-typed source to optimized x86
- OS practicum (A+): preemptive threads, UDP, TCP, file system (written in C)
- Distributed systems (A+): Paxos protocol and Bayou protocol (written in C++)