

# Dan Zimmerman

<https://danz.im> | [daniel.zimmerman@me.com](mailto:daniel.zimmerman@me.com)

Performance Software Engineer | Strong Passion and Deep Experience in End-to-End Performance

## LINKS

Github:// [danzimm](#)

LinkedIn:// [danzimm](#)

Math Stack Exchange:// [danzimm](#)

LLVM:// [danzimm](#)

AOSP:// [danzimm@fb.com](#)

## ACADEMICS

### LOYOLA UNI. CHICAGO

MS in Mathematics

2022 - Present | Chicago, IL

Analysis II • Theory of Games • Optimization • Automata & Formal Languages • Partial Differential Equations • Functional Analysis • Topology

### LOYOLA UNI. CHICAGO

BS Mathematics,

Theoretical Physics

2012 - 2015 | Chicago, IL

GPA: 3.76 (Major), 3.467 (Cumul.)

### DES SUPERNOVA RESEARCH

Undergrad Assistant | 2013 - 2015

Argonne National Labs | Chicago, IL

Worked with Dr. John Cunningham & Dr. Steve Kuhlmann to understand Type Ia "Standard Candle"

Supernovae; used `sncosmo` to simulate and analyze supernovae light curves.

### PCMI RESIDENCE

Summer 2014

PCMI/IAS | Park City, Utah

Attended talks on calculus of variations & differential geometry at PCMI.

Presented an introduction to calculus of variations via the dirchlet functional.

### STAGEBLOC INTERNSHIP

Summer 2013

Chicago, IL

Implemented reactive framework for connecting web APIs to iOS app in swift & ObjC.

### AWARDS

Loyola Uni. Chicago

Richard J. Driscoll Memorial Award for Mathematics • Father Gerst Memorial Award

## VOCATIONAL EXPERIENCE

### ADYEN | Staff Software Engineer | Mobile / POS Terminals

May 2023 - Current | Chicago, IL (Hybrid) | C/C++, Swift, Python

- Established engineering best practices across orgs.
- Aligned Mobile & POS Terminals in short term to improve long term collaboration, i.e. via aligning technologies & APIs.
- Established effective product/engineering communication processes.
- Lead efforts to modernize C++ codebase via rearchitecting, improved testing practices & iterative improvements.

### SPOTIFY | Software Engineer | iOS

Apr 2022 - Jan 2023 | Chicago, IL (Remote) | ObjC, C/C++, Swift, Python

- Improved iOS startup instrumentation & app quality processes.
- Designed Early Quality Tests to better detect nebulous quality regressions.

### SNAP | Software Engineer | iOS, CI, Backend, Tooling

May 2020 - Feb 2022 | New York, NY, Chicago, IL (Remote) | ObjC,

C/C++, Swift, Python

- Implemented local & prod perf instrumentation: used by 10s of teams.
- 5-10% startup performance improvement via I/O optimizations.
- Designed & implemented python CI infra aimed at debuggability.

### FACEBOOK | Software Engineer | iOS, Android, Mobile

JavaScript, Backend, Compilers, VMs, Tooling

May 2017 - May 2020 | New York, NY | ObjC, Swift, C/C++, Java, x86 &

ARM asm, PHP, JS, Python, Rust, Shell

- Clustering & Regression Data Analysis used to understand perf metrics.
- Improved CPU, I/O & memory performance of iOS JavaScript frameworks through various optimizations resulting in improvements from 2-40%.
- 5-10% startup improvement from I/O performance optimizations.
- ObjC compiler optimizations resulting in ~20% binary size reduction and 7-9% CPU performance improvement.
- Fixed bugs in clang's Obj-C++ codegen upstream: **D41050**, **D59873**.
- Reduced app-size by 4-6% via debug info compiler optimization in **Redex**.
- Worked on **AOSP** to improve Android on-device optimizer resulting in 15% reduced app-size & 5-30% latency improvements.
- Implemented Proprietary Android on-device bytecode optimizer resulting in 2-3% startup improvements.

## PROGRAMMING SKILLS

### Major Experience

C • C++ • ObjC • Swift • PHP • Python • Android Java • i386 Assembly  
• x86\_64 Assembly • armv7 Assembly • arm64 Assembly • SH/BASH

### Some Experience

Rust • Kotlin • Go • CMake • Makefile • Matlab • Mathematica • Excel  
• Perl • Ruby • JavaScript •  $\LaTeX$  • HTML • CSS • SQL

## ADDITIONAL VOCATIONAL EXPERIENCE

### **ARITY** | Application Developer | iOS, Mobile JavaScript

Jul 2016 - May 2017 | Chicago, IL | ObjC, C/C++, x86 & ARM asm, JS

- Led & Implemented OTA Algorithm infra, Testing Strategies for iOS Driving Behavior App used by 10,000s of users.

### **STAGEBLOC/FULLSCREEN** | Mobile Developer

Jan 2016 – Jun 2016 | Chicago, IL | ObjC, Swift, PHP | iOS, Backend

- Worked on iOS social, shopping & SVOD apps used by 1,000s of users.

### **GOOGLE** | Software Engineer

Aug 2015 – Jan 2016 | Mountain View, CA | Objective-C | iOS

- Implemented flight & sports cards on the iOS Google Now Feature team: used by 100,000s of users.