Benjamin Barenblat

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Generalist software engineer (>10 years of experience) with expertise in portability, assembly programming, and numerics.

Work experience

Google (2015–2021, 2022–present) *senior software engineer*

- Current work: migrating Google products to Arm; supervising a junior engineer as we eliminate references to the *x*86-specific extended-precision float type throughout Google's billion-line codebase
- Enabled a major Google Cloud product to run correctly on Arm CPUs by eliminating other *x*86-based assumptions from foundational C++ libraries
- Dramatically sped up iOS development for thousands of engineers by forking a widely used Apple development tool and modifying it to support Google's unique build and CI environments
- Permanently eliminated entire classes of bugs from Google's iOS codebase by enabling *-Werror* for all Objective-C builds, fixing hundreds of existing bugs along the way
- Created code-review automation for over 300,000 patches related to Google-wide security and performance issues; received departmental award
- Imparted C++ competency to dozens of new engineers, teaching the Google C++ style (google.github.io/styleguide/cppguide.html) through hundreds of practical code reviews
- Facilitated widespread adoption of Google-maintained open-source libraries by packaging them and uploading them to the Debian archive
- Launched development on the RISC-V Go compiler backend; presented at the 5th RISC-V workshop

Starry (2021) *principal software engineer*

- Simplified firmware builds for multiple high-power radio models by proposing, advocating for, and directing implementation of a common API layer atop multiple vendor SDKs
- Supervised three junior engineers maintaining custom embedded Linux daemons for oscillator temperature compensation, radio startup, and remote diagnosis

Education

Massachusetts Institute of Technology (SB 2013, MEng 2015)

Thesis advisor: Adam Chlipala, Computer Science and Artificial Intelligence Laboratory

- Graduate research on formally verified embedded software systems: mathematically proved noninterference between multiple applications running concurrently in the flat address space of an Arm Cortex-M microcontroller (thesis: DOI:1721.1/100294)
- Relevant coursework: operating system engineering, microcontroller project laboratory (final project: youtu.be/AsqBDc-zR2A), computer language engineering, performance engineering

Skills and credentials

- Fluent in C, C++, Standard ML, shell; competent in Python, Go
- Exceptional technical writing skills
- Active Debian Developer with multiple packages in wide use