Patrick **Thomson**

PROFILE

I am an experienced software engineer, author, and speaker who has shipped software at extreme scale and to billions of users. I care deeply about the craft and practice of programming. I have sixteen years of full-time experience, from small startups to multinational corporations. I am comfortable at all levels of the stack, from frontend UX to operating system primitives.

My areas of interest include distributed systems, programming language theory, developer and build tooling, and functional programming. I am looking for full-time work in the New York City metro area or remotely.

CONTACT DETAILS

@ patrick.william.thomson@gmail.com
🌐 github.com/patrickt
✍ blog.sumtypeofway.com
✉ Queens, NY

SKILLS

- Haskell, Rust, Go, C, Ruby
- Distributed and data-intensive web services
- Compilers, interpreters, program analysis
- Relational and NoSQL databases

HOBBIES

- Live-coding music
- Creative writing
- Finding the perfect soup dumpling

WORK EXPERIENCE

Senior Software Engineer, Code Search at GitHub, Inc.   2023–2025
- Contributed to and extended a world-leading code search engine.
- Maintained RPC services and ingest pipeline for 100M+ repositories.
- Primary maintainer for GitHub syntax highlighting service.

Senior Software Engineer, Semantic Code at GitHub, Inc.   2018–2023
- Played a core role in developing GitHub's first code navigation services.
- Scaled systems from internal prototypes to millions of production users.
- Implemented cutting-edge academic research for industrial ends.
- Provisioned and integrated complex cloud architectures.

Compiler Engineer at Reconfigure.io   2016–2018
- Implemented experimental Go compiler targeting FPGAs.
- Maintained and modernized legacy compiler backend.

Backend Engineer at Helium Systems   2014–2016
- Designed and implemented frontend and backend web services.
- Developed client libraries in C, Ruby, and Python.

Graphics Engineer, Productivity Team at Apple, Inc.   2011–2014
- Maintained graphics primitives and shared application frameworks.
- Implemented user interfaces on mobile and desktop platforms.
- Contributed to major product rewrite.
- Mentored coworkers during transitions to Git version control.

Intern, BSD Team at Apple, Inc.   2009–2011
- Built debugging tools and modernized Unix tool build procedures.
- Contributed to first Ruby x86 native compiler.

OPEN SOURCE

Co-creator of the fused-effects effect system and its ecosystem. Core contributor to the Semantic program analysis framework. Contributor to the tree-sitter parsing toolkit and package ecosystem. Co-creator of the the Airship web framework.

PUBLICATIONS

- Thomson, Rix, Wu, and Schrijvers: *Fusing industry and academia at GitHub (experience report)*. ACM SIGPLAN International Conference on Functional Programming, 2022.
- Timothy Clem and Patrick Thomson: *Static Analysis at GitHub*. Communications of the ACM, February 2022.
- *Static Analysis: An Introduction*. ACM Queue, July–August 2021.
- *An Introduction to Recursion Schemes*. Self-published, 2014–2019.

SPEAKING EVENTS

- Strange Loop (St Louis, MO): *Building Haskell Programs with Fused Effects* (2019)
- MoonConf (Boulder, CO): *Bracer: A Language Workbench* (2016)
- Carnegie Mellon University (Pittsburgh, PA): *iOS Performance and Concurrency* (2012)

EDUCATION

George Washington University. *B.S., Computer Science.*   2007–2011

References available on request.