BENJAMIN HODGSON

EXPERIENCE

Microsoft, Scope Compiler Team

Principal Software Engineering Manager *2024–*
Principal Software Developer *2022–2024*

- I manage the Scope Compiler team. My 6-person team and I design and implement the Scope programming language. Scope is a SQL-like language for distributed processing of petabyte-scale datasets, featuring deep integration with C♯ and a Pandas-like front-end for Python users.
- I'm deeply involved in every project my team takes on: formulating and pitching ideas, coordinating with customers and other departments, and directing implementation and delivery. Under my leadership, we've shipped some flagship features:
  - Support for running customer code using .NET Core, side by side with the legacy Framework. This was a complex multi-year migration which enabled tens of millions of dollars in annual savings.
  - A suite of features for Microsoft's Fabric analytics platform, including language-level support for Azure Gen2 storage, Delta Lake tables, and Microsoft's OneLake data management system.
  - A performance optimisation project which resulted in a ten-fold improvement for Python jobs.
- As a manager I aim to be a resource for my team, facilitating productive interactions rather than acting as a central decision maker.
  - I arranged regular knowledge sharing sessions with customers and other experts, enhancing my team's communication and deepening our connection to our customers.
  - I'm a dedicated mentor and teacher. With my guidance, one of my team members achieved promotion to Senior just four years into his career.
- I'm a highly technical and hands-on leader with many engineering achievements of my own.
  - I am the primary maintainer of my department's engineering platform. I support the build, testing, and deployment activities of around 100 developers within a large, old, multi-lingual repository. I've delivered mission-critical platform support for Python, .NET Core, and ARM.
  - I devised a dependency management strategy to enable supply-chain practices like dependency audits and rapid updates, migrating the department's patchwork of legacy approaches onto the industry-standard package managers Nuget (C♯) and vcpkg (C++). I was named as an honoree of Microsoft's Quality and Security Excellence Program for delivering this project.
  - I designed and built a collection of improvements to the Scope compiler's back-end code generator. My work resulted in an average 20% reduction in compilation time with no loss of runtime performance.
- I've contributed a net negative number of lines to Microsoft's codebase.

Stack Overflow

Staff Software Developer *2021–2022*
Senior Software Developer *2018–2021*
Software Developer *2016–2018*

- I was the team lead on Stack Overflow Talent, a recruiting platform. My team's projects included:
  - A major redesign of Stack Overflow's Jobs product, resulting in a 35% increase in job views and a 9% increase in job applications.

  - Long-term development of Talent's candidate management tools, such as Recommended Candidates, a feature I devised and pitched.

- I am a consistent advocate for performance, scalability, maintenance, and resolving technical debt.
  - I transitioned our front-end codebase to TypeScript and ES Modules. I modernised Stack Overflow's build pipeline using Webpack, and made substantial contributions to upstream open source libraries. I delivered an overall reduction in JS bundle size and a 20% improvement in deployment speed.
  - I designed and implemented improvements to Stack Overflow's job search algorithm. My work resulted in a 100-fold performance improvement, allowing the product to scale to millions of jobs and enabling multi-million-dollar syndication partnerships with other job boards.
- I mentored an apprentice developer in her first engineering job; she was brought on as a permanent employee and promoted to Software Engineer II after just a few months.
- I conducted hundreds of hours of interviews for roles across the Product & Engineering department. I wrote, and trained the team on, several interview questions which remain in use as standard.
- I contributed a net negative number of lines to Stack Overflow's codebase.

Huddle

Software Developer *2013–2015*

- I contributed a net negative number of lines to Huddle's codebase.

EXTRA-CURRICULAR

I'm the author of several high-quality open source libraries, available on my GitHub profile (`https://github.com/benjamin-hodgson`). Among my favourites are:

- Pidgin, a functional parsing library.
- Sawmill, a library of abstract tools for working with trees.

I've also contributed to third-party open source projects, including performance and documentation fixes for the .NET runtime's JIT compiler and base class libraries.

I write technical posts on my personal website, `https://www.benjamin.pizza`. Highlights include:

- Write You A Prolog, a four-part programming language implementation tutorial.
- Recursion Without Recursion, detailing Sawmill's API and design.
- Rewriting IRewritable, detailing Sawmill's internal implementation.

I love to learn programming languages, especially those which make you think differently about software — I've made personal projects using Haskell, Rust, Scala, Prolog, Agda, and Coq.

I'm a high-reputation Stack Overflow user with over 400 posts, mainly in the Haskell tag.

I love cooking and mixology. I play the piano to a high standard.

EDUCATION

MPhys Physics, St. Catherine's College, University of Oxford