Duncan Mak

188 Prospect St, Unit 3. Cambridge, MA 02139
(617) 379-1149, duncanmak@gmail.com

Employment

Sept 2020 ~ Feb 2023

Microsoft Inc. Cambridge, MA
Senior Software Engineer

Senior developer working on docs.microsoft.com and later learn.microsoft.com.

- **Member of the Video Squad:** Took over the maintenance of the Video on Demand service written in C# and CosmosDB and fixed bugs its frontend interface using Web Components and Typescript.
- Worked on various backend services (C# and YAML), fixing bugs and cleaned up common code into shared libraries.
- Reworked the Typescript codebase for internal admin interfaces. *Reduced existing code count by 5x*.
- **Revamp internal tools**: Led initiative to use Deno, Lit.dev and Modern Web Components to radically simplify how internal tools are authored, tested and deployed.
- Shipped the first version of Org Reporting in the first 3 months of joining the team
- Mentored junior developers

July 2019 ~ July 2020

Senior Software Engineer

- **Modernize VS Build:** Spearheaded the process to integrate MSBuild 16 for building components within Visual Studio, aligning VS with company-wide 1ES practices regarding .NET Core. Successfully on-boarded the first team (XAML Designer) after 3 months - this work allowed cross-target projects to finally be shipped, which was eagerly received because it's finally available after waiting for over a year.
- **Mac Notarization:** Coordinated a cross-company effort to support Notarization on macOS Catalina. Worked in conjunction with Edge, ESRP, Java, .NET, Office and VSCode to ensure we can continue to ship Mac products for the new macOS release. Visual Studio for Mac shipped on Catalina with first day support when Notarization began to be enforced.

July 2016 ~ July 2019

Senior Software Engineering Manager

- **Team Lead and Manager:** Grew to a team of seven, continued to be responsible for all engineering infrastructure used by Xamarin Platform engineering, which includes the Mono runtime and the Visual Studio for Mac IDE.
- **Collaboration across divisions:** Worked with teams in DevDiv and Office to design how best to move on-premise Mac build labs to be hosted inside data centers managed by MLS..
- **Monitor VSMac build times:** With a junior member of the team, we built a tool to monitor the build times of Visual Studio for Mac. Using the graphs generated by the tool, we were able to identify trends and specific commits that led to increased build times. This work was presented to senior leadership.
- **Custom Tools for smooth work-flows:** Designed and implemented Azure Functions that talk to GitHub API and Slack using F#, improved the code for the Update server for Visual Studio for Mac in C# and built other tools to create a friction-free engineering system for the engineers working on the Xamarin Platform.

Nov 2011 ~ July 2016

Xamarin Inc. (acquired by Microsoft) Boston, MA
Engineering Lead for Release Engineering

- **First release engineer:** One of the earliest members to join Xamarin. The first full-time employee responsible for release engineering of the Xamarin Platform.
- **Build lab:** Grew the on-premise Mac build lab from 5 machines to nearly 100 machines.
- **Hiring:** Hired and grew the team from one to four full time members.
- **Faster builds on multiple architectures:** Using data from our CI server, analyzed build logs and improved the build times for Mono by reducing unnecessary targets in the Mono makefiles.
- **Dashboards for optimized infrastructure:** Built a dashboard to visualize of our CI usage and turn off unnecessary jobs, a dashboard to track and display the status of each Mac build nodes in the growing lab. Chose to use Typescript and React, which were both new technologies at the time.

May 2011 ~ October 2011

MyEnergy Inc. (acquired by Nest Labs) Boston, MA
Software Engineer

- Wrote tools to extract textual information from PDFs using JRuby and Scala 2.8.

September 2008 ~ April 2011

Center for Brain Science, Harvard University Cambridge, MA
Software Engineer for the Connectome project

- As the only software engineer in the lab, I created and maintained the software stack used by Harvard researchers. I learned to assess, design, and implement software solutions that meet the ever-shifting needs of cutting-edge science research.

- Wrote the Piet image system used daily by neuroscience researchers. A cross-platform Java application with a polished UI.
- Led the development of multiple automated image alignment systems, including co-designing and implementing an image alignment algorithm in Clojure.

Skills

- Functional Programming using Clojure, F#, Scala and Scheme.
- Object-Oriented Programming using Ruby, Typescript, C#, Java, and Squeak Smalltalk.
- Fluent in English and Chinese (Cantonese and Mandarin).
- Able to speak, read and write French, Spanish and Japanese.

Education

January, 2009 — Northeastern University Boston, MA
B.A. in Computer Science

January, 2007 — Northeastern University Boston, MA
B.A. in Linguistics