Matt Harrison

Manchester, United Kingdom | hi@matt-harrison.com
github.com/mtharrison | linkedin.com/in/mtharrison | stackoverflow.com/users/1402929/mtharrison | matt-harrison.com

PROFESSIONAL SUMMARY

11 years experience developing software, primarily JavaScript web applications. Engineered large and complex backends. Confident in driving critical architectural decisions. Implemented high-value features, focusing on simplicity. Compelling storytelling, presentation and writing skills.

Machine Learning masters student interested in Natural Language Processing, PyTorch and transformer models. Looking to transition to a career in this area.

WORK EXPERIENCE

NearForm/McKinsey & Company | Senior Software Developer | Project: McKinsey Wave
Jan 2016 - Present | Remote, UK

Worked within multiple sub-teams, gaining broad exposure to the application. Responsible as the primary architect and developer on many of the application's core features.

- **Notifications:** Designed and built an email notification service using Node.js and Amazon's Simple Email Service, sending over 1 million monthly emails. Support for multilingual. Extended with a buffered notification feature to send scheduled email digests to users and a trigger-based notification feature to send emails to users on configurable events in the application.
- **Performance:** Designed a novel client-side caching solution to solve excessive application load times. Made use of strong cryptography primitives, client-side storage and a custom algorithm to reduce the amount of data fetched on load, reducing load time by ~70%.
- **DevOps:** As part of a small team of 3, designed and developed all the tooling and automation required to migrate from an Ansible deployment to individual compute instances to a fully automated, gitops-driven deployment of the entire application to Kubernetes clusters. Using Helm, ArgoCD and several other custom tools I wrote.
- **Tooling:** Designed and engineered a platform for building and executing operations tasks for the operations team from scratch. Consulted on the pain points of their current workflow and tailored a system that solves them. Allows writing jobs in any language of choice by writing a YAML configuration, then automatically creating all the Groovy code and a Docker container, allowing execution in Jenkins. Provides a way to write tests for operations tasks, a practice not employed previously.
- **Machine learning:** Built a document similarity tool using spaCy and scikit-learn. Reports on suspected duplicate documents. Fully self-contained application with React frontend, Go backend and Python ML code. Distributed to senior management as a Docker Image so they can analyse confidential client data on their local machine requiring no network access for security reasons.
- **Internal tooling:** Developed a web application to automate the process of creating the PowerPoint deck used to run weekly product demos. Mines text from Slack and uses a fine-tuned BERT transformer model, trained using PyTorch and fast.ai to summarise and classify the work done by each team. Comprises a Go WebSocket server and a Node.js script to build a .pptx file. Reduces time to create a deck from ~1hr to less than 5 minutes.

Indiespring | Full Stack Developer
Feb 2014 - Jan 2016 | Remote, UK

- Replatformed 30 web-based casino game emulators, previously written in Flash, to modern, open-source technologies, including Node.js and HTML5 Canvas
- Designed, built and maintained hosting infrastructure on AWS
- Modernised the pre-existing development workflow introducing automated testing
- Technologies: Node.js, Redis, AWS, Websockets

Loreto College | Senior Application Architect
Jul 2013 - Feb 2014 | Manchester, UK

- Designed and built several greenfield applications to replace existing traditional paper-based processes
- Significantly improved efficiency and reliability of several college administration processes, giving back 100s of valuable hours to teaching staff.
- Consulted with multiple stakeholders for each project, including management, teaching staff and students

SKILLS

Programming Languages

- Proficient in: JavaScript, Go, Python, Rust
- Working knowledge of: C, C++, TypeScript, Bash

Front end

- Proficient in: HTML, CSS, JS, React

Back end

- Proficient in: Express (node.js), hapi.js (Node.js), Go
- Working knowledge of: Rocket (Rust), Tornado (Python), Flask (Python)

Databases

- Proficient in: SQL, MongoDB, RethinkDB

DevOps

- Proficient in: Kubernetes, Helm, ArgoCD, Jenkins

Cloud

- Proficient in: Many AWS services and APIs, Kubernetes application development

Machine Learning

- Proficient in: PyTorch, fast.ai, sci-kit learn, Pandas, NumPy, Seaborn
- Familiarity with: spaCy, nltk, Gensim, Hugging Face transformers
- Working knowledge of: TensorFlow

EDUCATION

Master of Science in Computer Science (Machine Learning specialisation)
Georgia Institute of Technology, Jan 2020 - Ongoing
GPA: 4.0

Bachelor of Arts in Architecture
University of Manchester, Sep 2007 - Jul 2011
Honours: 2:1

PROJECTS

Hapi.js in Action (https://www.amazon.com/hapi-js-Action-Matt-Harrison/dp/1633430219) | Author

- Published book that teaches readers how to succeed with Hapi.js without any prior experience
- Covered usage of the entire Hapi ecosystem with code examples and an associated GitHub repository

Hapi.js (https://github.com/hapijs) | Core Team Member

- Fixed bugs, wrote documentation, helped to manage issues, reviewed PRs
- Engaged with the community on StackOverflow, becoming the all-time top answerer (https://stackoverflow.com/tags/hapi.js/topusers)

Deno (https://deno.land/) | Contributor

- Helped out with the early stages of Deno's (TypeScript runtime created by Node's creator) development
- Wrote documentation, helped fix bugs in Rust
- Created the initial PR for integrating the V8 debugger with Deno, a large undertaking which involved writing Rust and C++.

Wasm-raytracer (https://github.com/mtharrison/wasm-raytracer) | Owner

- Built an interactive application comparing the performance of Rust WebAssembly with JavaScript on the very CPU-intensive task of Raytracing