

Frontend & backend web • Data-intensive workloads • Cloud infrastructure

ARENA 3.0 · Participant

2024

Python, Pytorch, nnsight, TransformerLens

- The <u>the ARENA 3.0 program</u> led by <u>Callum McDougall</u> offers a deep-dive into machine learning with a focus on mecahnistic interpretability
- Built convolutional networks, residual networks, optimizers, GANs, VAEs and transformers from scratch
- Interpreted open source models with tools such as function vectors, SAEs, <u>nnsight</u> and <u>TransformerLens</u>
- Applied various training techniques, including Q-learning, PPO and RLHF

Canva · Senior Software Engineer (Backend + Frontend)

2022 - 2023

TypeScript, React, Java, Terraform, AWS, GraphQL, Protobuf, PostgreSQL, DynamoDB

- Managed all pages on <u>canva.com</u> and <u>canva.cn</u>. These 32,590 pages receive ~30 million requests per day
- Expanded infrastructure to the China region, established communication between the Beijing and Landing Pages teams, and delivered experimentation and fallback mechanisms in the China region
- Created web tools to manage pages and sync millions of changes between databases
- Implemented URL management in Canva's CMS, replacing over 10,000 hardcoded URL strings, increasing TTM and decreasing load on engineers

Two Bulls · Senior Software Engineer (Backend + Frontend)

2020 - 2022

Vue.js, TypeScript, Node.js, C#, Python, AWS, MySQL, DynamoDB

- Delivered bespoke web applications including <u>KidsDoc</u> telehealth, <u>TheOneTwo</u> shopfront, <u>Victorian</u>
 <u>COVID border permits</u> (reached #3 on the app store!) and the <u>Release.Me</u> land sales platform
- Responsible for project leadership as well as frontend & backend technical proficiency
- Learned to work with clients ranging from startups in the inception phase, to state governments to find unique solutions

Unico · Software Engineer (Backend)

2019 - 2020

Java, MySQL, Python, MATRIXX, Linux, Docker, Spring

- Performed large scale database migrations (ETL) for prominent telecommunications vendors
- Successfully migrated over 20 million records to the MATRIXX in-memory database in a single day
- Gained experience in data-intensive systems and concurrency

Immersive Analytics · Software Engineer (Research)

2017 - 2019

JavaScript, Three.js, WebGL, Python, R

• Developed a highly performant web application for 2D and 3D visualisation of protein complexes and cross-link mass spectrometry data using *Three.js* and *WebGL*