Maxwell Clarke

I'm an engineer with experience in deep learning, full-stack web development, programming language design and game development.

PROJECTS

Transformers for Hand Motion Modelling
(Master's Thesis)

My Master's project was to apply transformer models to hand motion modeling. Using a dataset of hand motion capture data, I trained transformer models of varying sizes and configurations to predict pose sequences.
Transformer models have challenges when applied to real-valued and vector data, and I developed expertise here, as well as in Pytorch and Tensorflow.

Kal
(Programming Language)

My own programming language. It is a dynamic language with an effect system, developed in Rust, with plans to compile to WebAssembly. GitHub Link

ThisPPL

An implementation of the *probabilistic programming language* in *Introduction to Probabilistic Programming*.

Interpretability experiments

My implementation of Distill's *Feature Visualization*.

EXPERIENCE

2019 - 2020

Software Developer, Intranel Consulting, Christchurch, NZ.

Intranel is a small consulting company which does bespoke software development. During 2019 and 2020, I worked on: A blockchain data analysis project, a crypto token integration project, and workflow web apps for Ryman Healthcare.

2017 - 2018

Junior Software Developer, Intranel Consulting, Christchurch, NZ.

Full-stack web development for Cryptopia, a Christchurch-based cryptocurrency exchange. During their period of rapid growth, I worked on improving their web platform using JavaScript, .NET/C# and SQL Server.

2015 - 2016

Intern Software Developer, Verizon Connect, Christchurch, NZ.

Verizon Connect (formerly Telogis) is a US-based Vehicle Telematics provider. I was a full-stack web development intern for the Customer Tools team. I worked full-time during the summer, then continued part time.

EDUCATION

2020 - 2022

Master of Science in Computer Science.
Victoria University of Wellington, Wellington, NZ.

2015 - 2018

Bachelor of Science in Computer Science.
GPA 8.15 (A/A+ average).
University of Canterbury, Christchurch, NZ.

SKILLS

Programming Languages

Python
Rust
C# / .NET
TypeScript
HTML / CSS / JS

Machine Learning

Jupyter
Numpy
Tensorflow
Pytorch
Transformers

Web Development

PostgreSQL
SQL Server
Vue.js
ReactJS

DevOps

Kubernetes
Git
Docker
Linux
Jenkins
Ansible

ABOUT ME

I'm a software developer with professional experience in full-stack web development, and research experience in machine learning and AI alignment. I also have non-professional experience in game development, programming language design, and database development. I recently completed a Master's thesis in machine learning — training and applying transformer models.

In my free time, I enjoy building my own programming language using Rust, rock climbing, and dabbling in game development with the Godot game engine.

I participate in Effective Altruism, a social movement which asks how we can do the most good for the world with our resources. I aim to use my career to help solve the world's most pressing problems, especially the AI Alignment problem.

CONTACT

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