Paul Freeman

Software Engineering Lead

+64 021 041 6766

paul.freeman.cs@gmail.com

linkedin.com/in/freemapa

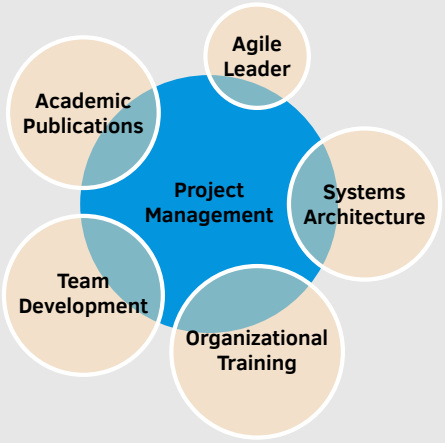
github.com/paul-freeman

sylo.io/network

steamcommunity.com/id/freemapa

Skills

Overview



Programming

Go • C# • Elm

TypeScript • Python • C

Java • C++ • Haskell

Projects

Sylo Node Service providers on the decentralised Sylo Network

Sylo Network Protocols for distributed group consensus and networking services using P2P communication

Oplog Sync Distributed group consensus based on smart delta patches

PLACE A modular laboratory automation framework

AARS Sequencing Alignment of genetic data to explore the origins of life

FreeWill (Rimworld Mod) Colony automation using rule-based AI expert system

Experience

2023–2023 **Software Engineering Lead** Dotmatics - OMIQ Team

Led major refactoring projects in Go to enhance the architectural efficiency of our flow cytometry software. Managed the Jira board to streamline team workflows and advocated for agile best practices. Conducted a thorough readiness audit to ensure operational resilience and secure key management. Actively contributed to building and training a dynamic team, incorporating generative AI in the hiring process for improved candidate selection. Proactively reviewed and improved team PRs, and consistently monitored and reported on KPIs to drive performance insights, despite limited access to metrics. Skills: *Go, GCS, Kubernetes, Postgres, Jira, OpenTelemetry, Docker, Angular*

2022–2022 **Senior Engineer** Soul Machines - Platform Performance Team

Designed and implemented an OpenTelemetry distributed tracing system to expose performance defects in the product. Solicited buy-in from stakeholders and closely managed the implementation and deployment process. The system delivered results almost immediately and led to directly measurable improvements in the product. Skills: *Agile, Jira, OpenTelemetry, GitHub, AWS, Azure, C#, TypeScript, Docker, Terraform*

2018–2022 **Project Lead** Sylo - Backend Development Team

Managed the design of the Sylo Node. Also a primary architect of the Sylo Network. Grew and led an agile team of six people. Responsible for the full product development lifecycle: concept, research, implementation, deployment, scaling, iteration, maintenance, and support. Skills: *Go, Jira, AWS, Flutter, Elm, JavaScript, Libp2p, GitHub, Protobuf*

2016–2018 **Software Researcher** UoA - Physical Acoustics Laboratory

Managed the development of a modular laboratory automation framework. Deployed into an academic research setting as the automation system for a laser laboratory. Published the framework in a US physics textbook. Skills: *Python, Elm, JavaScript, Github, C, Cython, Java, Lua*

Education

2014–2016 **Masters Degree | Computer Science** University of Auckland

First Class Honours - Artificial Intelligence

2010–2014 **Bachelors Degree | Computer Science** Oregon State University

Summa Cum Laude

Publications

Freeman, P. & Shepherd, J. (2020). *Data Acquisition and Experimental Control with Python*. In Smith, W. (Ed.): *Experimental Physics: Principles and Practice for the Laboratory* (pp. 195-226). CRC Press.

Schlitter, F., San Pedro, J. C., Freeman, P., Lowcay, C. (2020). *Sylo Protocol: Secure Group Messaging*. https://dev.sylo.io/whitepaper/sylo-protocol.pdf

Freeman, P. F. (2016). *Abstract Syntax Tree Retrieval: Inferring Student Coding Goals Using Case-based Reasoning and Code Similarity*. The University of Auckland. ResearchSpace@Auckland.

Freeman, P., Watson, I., & Denny, P. (2016). *Inferring Student Coding Goals Using Abstract Syntax Trees*. Paper presented at 24th International Conference on Case-Based Reasoning Research and Development (ICCBR). Atlanta, GA.

Han, K., Freeman, P., Han, H.-Y., Hamar, J., Stack Jr., J. F. (2014). *Finite-Difference Time-Domain Modeling of Ultra-High Frequency Antennas on and Inside the Carbon Fiber Body of a Solar-Powered Electric Vehicle*. ACES Journal, Vol. 29.6.