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# Freya Madeline Broderick

## Senior Software Engineer (Founding & Infrastructure)

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<https://github.com/freyamade>

<https://freyama.de>

### SKILLS

Very strong experience in Python and TypeScript/Node, used to develop RESTful APIs and VueJS powered frontends. Strong background in first-principles engineering, Performance optimisation, containers and clustering using Kubernetes or Google Cloud Run, both directly and via Terraform. Very experienced in DevOps and architecture ownership, managing hardware infrastructure and the systems that run on them, again both directly and via Terraform.

### EXPERIENCE

#### **Honu.ai, Remote** - *Lead Backend Developer*

SEPTEMBER 2023 - MARCH 2026

- Architected a zero-trust credentials proxy system allowing AI agents to securely interact with third-party APIs (e.g., Google Analytics) without exposing raw credentials.
- Primary backend owner for the Decision Infrastructure, balancing high-security requirements with seamless agent integration across GCP services.
- Managed the building and rollout of microservices in Python, using FastAPI, onto Google Cloud Platform services like Cloud Run, or Compute Engine, using Terraform and Terragrunt.
- Helped develop, and managed, a contextual programming system for the sharing of Business Context information, which was the underlying system of the Honu Decision Infrastructure, to power decision making in context for AI Agents.
- Created a User-owned credentials proxy system for the allowance of AI Agents built by Honu/other Users to access Rest APIs for services such as Google Analytics for the User, without directly being given credentials by placing a proxy object into the Business Context system for Agents to use.
- Developed a Data Proxy system where Agents could create Data Stores in our system, using Bigquery initially but was extensible for any backend in future, and have them accessible by any other Agents in the User's Contextual Model.
- Built a custom task-based API using FastAPI, Google Cloud Task Queues, and Redis, for running LLM powered pipelines to turn User ideas into full Business Plan for the generation of new SaaS-based SMEs.

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- Created a custom Chat infrastructure for the Decision Infrastructure to allow Users and Agents to converse with the Business Context in mind, by sending messages with Business Artefacts linked to establish context for the Agent.
  - Built multiple data pipelines for the ingestion of user's analytics and metrics data from various systems into the platform for the Agents to analyse and use to make decisions. Initially using Airflow DAGs running on Google Cloud Composer, but eventually migrated to a task system running on the platform directly, leveraging the Credentials and Data proxy systems to gather data and make it natively accessible to all Agents on the system.

### **N8N.io, Remote** - *Mid-level Backend Software Engineer*

AUGUST 2022 - FEBRUARY 2023

- Developed a system of tracking workflow execution and http request statistics for individual workflows.
- Fixed issues with multi-user workflow editing that prevented users from collaborating successfully.
- Added API endpoints for checking licensing and usage information.

### **CloudCIX Ltd, Cork City** - *Chief Cloud Architect, CTO (Software)*

JUNE 2017 - DECEMBER 2019, JULY 2021 - JULY 2022

- Migrated internal git hosting from Phabricator to GitLab, set up CI/CD using GitLab to streamline the development process for the entire team.
- Designed and led the construction of REST APIs in Python/Django for the construction and management of a Cloud computing platform.
- Helped in the design and construction of underlying Python services that managed and built infrastructure on SRX Routers and KVM Host servers.
- Designed and built initial versions of a comprehensive and extendable UI for the Cloud using TypeScript and Vue.js.
- Led the breakdown and transfer of monolithic Python 2 Django applications to Python 3 applications running as micro services in Kubernetes clusters.
- As part of the Python 3 migration, removed the dependency on Openstack services, replacing Keystone with a self maintained LDAP server, and Swift with a clustered Minio instance.
- Designed and managed the construction of a resource monitoring platform built using Go services reporting to an Influx DB instance, as well as the Python and Vue.js applications to display the information to the NOC.
- Made initial design plans for setting up our APIs in different regions, including researching read/write splitting for our PostgresDB instance.
- Managed interviewing, hiring and mentoring summer intern developers for the summer of 2019.

### **UCC Netsoc, Cork City** - *Systems Administrator / Ex Officio*

SEPTEMBER 2017 - MAY 2019

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- Introduced Docker to the SysAdmin team, and assisted in moving existing and new software to using it.
  - Assisted in the rewrite of the member portal to using Python and Flask.
  - Made various user-facing additions to systems, including a feature that allowed for students to select their preferred shell for use on our servers.
  - Gave tech talks on several subjects, including Docker and CSS, the slides for which are available at <https://freyama.de/some-techtalks/>

## EDUCATION

### University College Cork, Cork City - *BSc Computer Science*

SEPTEMBER 2014 - MAY 2018

Achieved a **First Class Honours** in the Web Systems Engineering stream.

Final Year Project was an investigation into providing actionable explanations for nearest-neighbour and matrix factorisation based recommender systems. Received an award on the open day from Fidelity Investment for my project.

## PROJECTS

### SavageAim - <https://github.com/SavageAim/app>

SavageAim is a public website designed for people who raid in the MMORPG FFXIV. It allows users to manage teams of players and other game-specific features. It is live at [savageaim.com](http://savageaim.com) and has ~200 users, and is deployed and managed solely by me on VM architecture.

### GitHub User Languages - <https://github.com/freyamade/github-user-languages/>

Browser extension for Chrome and Firefox, written in TypeScript, that displays a pie chart on a GitHub account page indicating the amount of projects the user has, grouped by the dominant language.

### freyama.de - <https://github.com/freyamade/fresh/>

My personal website, in the form of an interactive shell, built in TypeScript, with an installable package built in Rust using WebAssembly.