ALEXANDER PULFORD

Software Engineer

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SUMMARY

Programming for 8 years. Self-taught. Recent graduate. Experience with AI, Cryptography, GUIs, and building open-source software.
Completed and published projects across various languages, frameworks, and levels of complexity.

SKILLS

Languages: Python, C#, TypeScript, Golang, C, C++ Java, Kotlin, JavaScript, HTML

Technologies: Linux, Qt, QML, Node.js, Solid.js, OpenGL, WinForms, WPF

EDUCATION

2020 - 2023 **Bachelor of Advanced Science (Computing)** — **Curtin University**
With a focus on Mathematics and Computer Science.

PROJECTS

TypeScript/Node 2024 — **Obsidian AI Chat** — **arenasys/obsidian-ai-chat**
Extension for the note-taking application Obsidian , allowing users to talk to AI about their notes. Supports all major LLM APIs.

Python/QML 2023 - Now — **qDiffusion** — **arenasys/qDiffusion**
Desktop native Qt-based GUI toolset for AI image generation via Stable diffusion. Supports local and remote inference, training, merging and many Quality of Life features missing from contemporary WebUIs.

Python/QML 2023 - Now — **Lineworks** — **arenasys/lineworks**
Desktop native LLM integrated text editor built for cowriting. Built for simple and hassle-free usage. Supports local inference via llama.cpp as well as remote APIs.

JavaScript 2023 - Now — **qDiffusion Web** — **arenasys/arenasys.github.io**
Web-based interface with a simplified feature set. Designed for mobile users wanting to leverage qDiffusion's remote notebooks (Google Colab, Kaggle, SageMaker).

Python/Torch 2023 - Now — **SD Inference Server** — **arenasys/sd-inference-server**
Backend for qDiffusion and qDiffusion Web. Communicates via encrypted BSON over Websockets and supports multiple concurrent users.

C#/WinForms 2023 — **Palworld save editor** — **arenasys/palworld-save-edit**
Small tool using UESave to rename players and transfer player appearance from one save file to another.

Python/QML 2022 — **SD Tagging Helper** — **arenasys/sd-tagging-helper**
Qt-based GUI to help with Stable diffusion dataset curation. Useful for manual and automatic tagging, though originally designed around manual cropping (obsolete after bucketing was introduced).

Golang, C++/QML 2022 — **COMB Core** — **dyoform/combcore**
An implementation of a post-quantum, anonymous cryptocurrency built on the Bitcoin blockchain. GUI built with C++/QML, backend and library (libcomb) written in Golang.

C#/OpenTK 2021 — **Isosurface Renderer** — **alexpulford/isosurface**
3D renderer for Isosurfaces. User can specify geometry and normals via GLSL. Uses OpenGL compute shaders to implement the Marching cube algorithm.

Golang 2021-Now — **Wire** — **archeoid/wire**
Easily send/receive files over Ethernet or WiFi with zero configuration via IPv6's link-local and multicasting functionality.

C++/C#/Julia 2021 — **Gaussian quadrature project** — **alexpulford/advsci-implementation**
Spline visualisation tools built for my 2nd year research project which focused on a method to compute Gaussian quadratures via Homotopy continuation. GUI Tools are: C#/ImGUI/OpenTk, C++/Qt/OpenGL, and Julia/ImGUI/OpenGL. Method implementation was in C++/Eigen/Autodiff.

C/Nuklear 2020 — **GUICrypt** — **archeoid/guicrypt**
Front end for libtomcrypts symmetric cipher functionality. Includes every common mode and cipher. GUI written with nuklear/glfw for cross platform compatibility.

C#/WPF 2018 — **Interpreted Assembly** — **archeoid/InterpretedAssembly**
Editor and Interpreter for a simple interpreted assembly-like language. GUI Created with WPF and SlimDX.

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