

Joshua Smith

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github.com/JS195

Summary

Graduate engineer with 18 months' experience developing high-performance computing, signal processing, and machine-learning systems. Delivered production grade signal-processing pipelines, onboard navigation software, and GPU-accelerated optimisation tools achieving $26\times$ faster execution and $7.5\times$ less function evaluations. Looking to apply my algorithmic engineering skills to tackle complex technical challenges in a fast-paced environment.

Technical Skills

Languages	Python	–	C++	–	SQL	–	JavaScript
Technologies	CUDA	–	Linux	–	Slurm	–	NumPy
Quantitative	ML	–	AI	–	Data Modelling		

Professional Experience

AWE – Graduate Data Scientist	Oct 2024 – Present
- Developed a signal-processing pipeline synchronising noisy data streams from nine distributed sensors to microsecond precision. Implemented denoising, unsupervised anomaly detection, waveform clustering, and time-difference-of-arrival localisation. - Delivered an onboard navigation system using low-SNR data under a strict latency budget. Constrained to 8GB RAM and a consumer CPU, I achieved 580m median accuracy for an object at 700km range, moving at 7.5km/s, with 4-second end-to-end latency. Presented to a variety of non-technical stakeholders, receiving positive feedback and budget approvals. - Implemented a multi-objective optimisation framework using surrogate modelling, reducing expensive function evaluations from 150,000 to 20,000 while maintaining solution quality. Accelerated compute via CUDA for a $26\times$ reduction in wall time. Deployed as a tool for company-wide use.	

Projects

Ancestrree – AWE	2026
- A zero-dependency Python package modelling data pipelines as directed acyclic graphs. Features content-defined chunking with an SQL backend. - Offers a lightweight alternative to a data-lineage platform, eliminating infrastructure overhead and external network risk. - Published on PyPI, and adopted by internal researchers.	
Orderflow analysis – Self	2026
- A Python pipeline for Binance futures/spot analysis, investigating how order flow drives price behaviour. - Implements a dynamic feature registry for OHLC aggregation, open interest, funding rate, and cumulative volume delta (CVD). - Includes a multi-panel Plotly framework for visualisation.	

Education

BEng	Engineering Mathematics (2:1) <i>University of Bristol, UK</i>	2020 – 2023
A-Levels	Mathematics (A), Physics (A), Chemistry (A) <i>Sir Henry Floyd Grammar School, UK</i>	2018 – 2020
