

Matthew Whitworth

Skilled technology leader with 15 years experience across finance, fintech and edtech

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Location: North America (relocation flexible)

EMPLOYMENT

PureType, Montreal, Canada

Mar 2024 - present

Technologies: Elixir, Phoenix (LiveView), Typescript, Python, PyTorch, tree-sitter

- ❑ *Founded to develop and sell a coaching assistant to improve software developer learning in teams*
- ❑ *Developed from scratch a code review + personalised microlearning SaaS platform for software engineering teams with GitHub reviewer and VSCode plugin*
- ❑ *Built a cross-language code analysis layer combining AST analysis and multi-stage LLM prompting*
- ❑ *Researched and built a graph neural network recommendation engine driven by knowledge graphs.*

Tallarum, London, UK

Mar 2018 - Feb 2024 (undergoing exit)

Technologies: Elixir, Phoenix (LiveView), Typescript, Ember, GraphQL, OpenFin, R, AWS, Terraform, Notion, Jira

- ❑ *Joined as a Senior Software Developer (Mar - Oct 2018), promoted to Lead Software Developer (Oct 2018 - Dec 2020) and then Chief Technology Officer (board member, Dec 2020 - Feb 2024)*
- ❑ *A fintech startup developing a market data aggregation platform for energy trading, ingesting unstructured data in the form of chat messages and voice calls to produce structured data in a SaaS Terminal and API, now sold to over 70% of supermajors and leading trading houses, processing tens of millions of messages a month.*
- ❑ *Scaled team from two to six developers, adding a product manager and lead data scientist, growing hires into senior and lead roles and propagating best software engineering and problem-solving practices*
- ❑ *Directed the company's "fair value" derived data product, to provide 3,000+ reference prices across 200+ products, in an opaque, illiquid market, incorporating Gaussian Processes to provide market-leading coverage and accuracy, and oversaw AWS architecture to tune and maintain models*
- ❑ *Researched, planned and led a voice recognition project to provide quick and accurate transcripts and quote data, as an additional data source for the Terminal product, and applied for Innovate UK government funding to support the project*
- ❑ *Initiated, developed and sold an API for processed and derived data from the platform to traders*
- ❑ *Added support for many new product groups and asset classes to the core NLP technology, establishing "Tallarum University", an internal set of training courses and a domain knowledge base*
- ❑ *Oversaw the technical customer sales and onboarding process, establishing a knowledge base for customer questionnaires and coordinating ISO27001 certification preparation and GDPR compliance*

Asperatus Capital, London, UK

Feb 2011 - Mar 2018

Technologies: C++, Boost, QT, Perl, R, MySQL, AWS, CFEngine, Ansible, Jira

- ❑ *Joined as a Technologist (Feb 2011 - Jul 2013), promoted to Senior Technologist (Jul 2013 - Apr 2016) and then Chief Technology Officer (Apr 2016 - Mar 2018)*
- ❑ *A quantitative hedge fund set up by the former Global Head of Electronic Arbitrage Trading at Credit Suisse, trading medium and high frequency strategies across a number of asset classes and regions*

- ❑ Managed team of two technologists, reporting to the CEO
- ❑ Planned and executed the migration of the firm's low latency European trading to a new executing broker, including development of a normalised data feed client
- ❑ Originated and implemented a cross-language server to provide a unified API for common research data access and transformation functions to reduce duplication of effort across the firm
- ❑ Responsible for maintaining the firm's proprietary trading supervisor, whose functionality comprised basket trading, risk and portfolio management
- ❑ Optimised the Linux production environment for a liquidity provision algo running on colocated trading machines – with a focus on ensuring uninterrupted pinned real-time threads – and wrote a set of scripts to capture and highlight performance issues. Reduced processing latency by 88%.
- ❑ Developed the firm's low-latency European equity data feeds to run in-process in trading algos. Raw feeds for LSE, Xetra, Eurex and OMX; and a normalised feed handler for Euronext, SIX and Oslo
- ❑ Developed and responsible for maintaining most of the firm's middle-office and back-office processes as a set of Perl scripts
- ❑ Procured and deployed trading machines to colocated exchange environments, managing system through CFEngine and automating system changes through Ansible

Bloomberg, London, UK — *Financial Software Developer*

Sep 2010 - Feb 2011

Technologies: C++, Javascript

- ❑ As part of the Systems team, I was part of a team of two starting development on an internal package management system for internal usage

Further exp: Internships with Bloomberg and the Applied Modelling Computation Group at Imperial College London

EDUCATION

CFA Society, London, UK — *Investment Management Certificate*

Nov 2015

As part of acquiring the FCA CF30 (customer function) at Asperatus Capital

Imperial College London, London, UK — *BEng, Computing*

Sep 2007 - Jun 2010

Awarded a First class degree and the **ARM Project Prize** for my final year thesis, "[Improving Networking](#)" - describing the implementation of a zero-copy send/receive userspace network stack for my operating system Whitix.

PERSONAL PROJECTS

Whitix — *Operating System*

Developed a x86/x86-64 operating system, Whitix, from scratch (2006 – 2010) with a preemptive multitasking kernel. Wrote a userspace network stack and Linux network driver compatibility layer

OPEN SOURCE

Maintainer or top contributor to a number of Elixir ([reverse_proxy_plug](#), [monocle](#), [mox_inject](#), [relative_datetime](#), [percy_client](#) and [phoenix_better_table](#)) and Ember projects ([ember-gherkin](#), [ember-useful-decorators](#))