Samuel Martin Frias

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Software Engineer with years of experience building high-performance systems (C#, TypeScript, Python) and optimizing real-time financial infrastructure used by hedge funds, energy traders, and payment platforms. Combines full-stack engineering expertise (front-end to DevOps) with a passion for complex problem-solving (chess engines, algorithmic trading).

EXPERIENCE

2021 - Now **Orchestrade (Financial Software Provider), Software Engineer & Solutions Architect** **London, UK**

Technologies: C#, TypeScript, .NET Core, Python, Docker/Kubernetes, AWS/Azure, SvelteKit, SignalR, RabbitMQ, PostgreSQL

• Led end-to-end development of Orchestrade's Python SDK, adopted by institutional clients (hedge funds, energy firms) to analyze risk/P&L and market data via seamless Pandas/DataFrame integration.

• Spearheaded pre-sales technical engagements with CTOs at multi-billion dollar hedge funds, banks, delivering custom PoCs for real-time trade pricing and risk analysis, integrating the client's custom quantitative libraries.

• Architected a refactor of our real-time risk engine using multithreaded C#, reducing portfolio-wide computation time by 54% (from 12s to 5.5s) for high-frequency trading clients.

• Built a TypeScript/SvelteKit front-end with SignalR live updates, achieving <100ms latency for real-time P&L dashboards for Front Office users.

• Designed and maintained a REST API (ASP.NET Core) service, which boosted client adherence and acquisition. The REST API was built with performance and usability in mind, compliant with OpenAPI standards. The API is used in production by the largest european neobank for its payment system.

• Dockerized 10+ microservices and migrated orchestration to Kubernetes, cutting deployment time by 70% and enabling hybrid cloud (AWS/Azure) scalability.

2021-2021 **DarkTrace, Cybersecurity Specialist** **London, UK**

• Provided technical expertise in the sale process of the core product offering. Talking to client's technical teams to understand how Darktrace's technology offering works, describing the Machine Learning algorithms and how the product fits in the network to dectec anomalies and take a proactive cybersecurity approach.

2020 **Imperial College London, Mathematical Modelling Researcher** **London, UK**

6 month research grant for deploying the outcome of my master thesis into production

• Developed Bayesian inference Python package for noisy biological time-series data, deployed via Docker/Django and adopted by 3 research labs for modelling gene modifications.

• Researched and implemented a novel analytical model prediction method using Gaussian Process, Bayesian learnin and machine learning on time-series data, improving model accuracy by 32% vs. traditional methods.

PROJECTS

Insty.io – LLM-Powered RFP Tool | TypeScript, Next.js, OpenAI, Pinecone

• Built Retrieval-Augmented Generation (RAG) pipeline with fine-tuned GPT-4 and Pinecone vector DB, reducing RFP response time by 65% for early users.

• Designed tRPC backend with Zod validation and Next.js 14 front-end, prioritizing type safety and SSR performance.

Cherris – High-Performance Chess Engine | Rust, Tauri

• Engine achieves 10M nodes/sec via bitboard representations and alpha-beta pruning with transposition tables.

• Built a simple multiplatform UI using Svelte and Tauri, allowing users to play directly on several platforms.

Smart Baby Buggy (Computer Vision) | Python, OpenCV, TensorFlow

• Trained CNN model (98% accuracy) for obstacle detection on crowdsourced image data.

• Featured in Huffington Post and Evening Standard; prototype tested by Royal National Institute of Blind People (RNIB).

EDUCATION

2016-2020 **Imperial College London - MEng Biomedical Engineering** **London, UK**

Awards: Best Master's Thesis (Top 1% of 110+ students)

Relevant Coursework: Machine Learning, Control Systems, C++ Programming, Statistical Signal Processing

Co-Founder & Lead Organizer: Algorithmic trading society. Grew society to 300+ members; partnered with BlackRock to host Europe's largest quant finance competition (Algothon), attracting 200+ participants annually. Taught workshops on Python for algorithmic trading and backtesting strategies using historical tick data.

KEY ACHIEVEMENTS, SKILLS & INTERESTS

Languages: C#, TypeScript, Python, Rust, SQL

***Frameworks**: .NET Core, SvelteKit, React/Next.js, ASP.NET Core*

***Tools**: Docker/Kubernetes, AWS/Azure, GitHub Actions, RabbitMQ, PostgreSQL*

***Quant/Finance**: Real-Time Risk Engines, P&L Reporting, Algorithmic Trading, HFT*

Languages: Spanish (Native), English (C2), German (C1), French (B1)

Sports and Interests: Boxing, Existencialism, Goedel Escher Bach