Johnathan J. Flaggs

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Software Architect with a focus on backend system development for fintech and robotics applications. Successful record of leading projects from proof of concept into production. Professional references available upon request.

Education

University of California, Riverside & Davis **Sep. 2010-Jun. 2014**

- UCR: BSME with concentration in Control Theory under Department of Mechanical Engineering (BCOE)
- UCD: Control Theory Courses under Department of Mechanical and Aerospace Engineering

Technical Toolset

Development Languages & Environments:

▪ Visual Studio	▪ Codeblocks	▪ SVN/GIT	▪ Batch Script	▪ Node.js
▪ Atmel Studio	▪ C, C++	▪ C# .NET	▪ MATLAB	▪ HTML, CSS, JS
▪ RSLogix/FactoryTalk	▪ Beckhoff TwinCAT	▪ MagneMotion	▪ Fanuc Robotics	▪ Cognex Vision

Professional Experience

Lead Software Architect at Essentium 3D **Jun. 2021-Present**

Leading robotics software architecture and development for high-speed industrial 3D printers. Ensuring that our team builds a software core that is sufficiently robust, scalable, and maintainable to support the product line.

- **Lead** the design and architecture of our core software which allowed us to expand from plastic to metal printing
- **Mentoring** Jr. Engineers on approaching complex problems and upkeeping best coding standards
- **OOP** and heavy emphasis on robustness, scalability, maintainability, and patterns in C# and C++
- **Anticipate** and mitigate the impact of future design changes on the software layer
- **Design** of macro and micro software architectures which define the core product
- **Manage** and review source control on a per-commit basis

Engineering Lead at Harpoon Protocol **Jun. 2020-Jun.2021**

Leading architecture and development for a loan liquidations (DeFi) platform. The platform allows users to manually participate in the liquidations market and hosts a proprietary Smart Liquidation Algorithm to provide liquidity to the market. I chose to use Node.js, C#, and React as our primary technology stack.

- **Designed** and trained a predictive model to compete in a time-only based order book
- **Consulted** for Anchor Protocol (Terraform Labs) on improving their liquidation order book
- **Contributed** executive decisions on software features that influence product direction
- **Managed** and supported a team of Sr. and Jr. level developers on approaching complex blockchain concepts
- **Anticipated** and mitigated the impact of API changes on the software layer
- **Educated** investors and stakeholders on the current state and future development of our product

Professional Experience

Lead Software Engineer at Satsy **Mar. 2019-Jun. 2021**

Developed an algorithmic trading platform which integrates multiple brokerage API's for live, simulated, and historical trading/analysis. The platform is multi-threaded and supports many unique features that are not available via popular trading platforms.

- **Developed** an easy-to-use strategy/indicator language that is unlimited in extensibility
- **Multi-Threaded** C# application allows real time data streams and an intuitive systems-focused UI
- **Created** a thread-safe real-time library for advanced mathematics using time series data
- **Low-Latency** execution C# library benchmarked against C/C++ for performance testing
- **Modular** architecture allows any UI to consume the Satsy.App backend service
- **Supports** live and simulated trading with TD Ameritrade, Binance, Gain Capital, and Simulated data feeds
- **Developed** a custom charting solution for rendering up to 250k data points in view, and > 2M points in memory

Sr. Robotics Software Engineer at Seagate Technology **Mar. 2017-Mar. 2019**

Developing software for cutting edge processes in digital storage technology. My contributions include:

- **Windows C# .NET** proprietary machine and vision process controls
- **Support** core vision libraries in C/C++
- **Cognex** VisionPro API integration
- **Machine-Vision Calibration** to establish precision robot coordinates
- **Motion Control** Kinematics, pick-n-place, multi-axis coordination, Quantum HSM framework
- **User Interface** Allowing users to fluidly interact with the multi-threaded application
- **Version Control** Using SVN, TFS and Agile/Scrum using Jira
- **OOP** Heavy emphasis on encapsulation, inheritance, polymorphism, and robust design patterns

Retail Trade Systems Developer **Jan. 2016-Mar. 2018**

Developed discretionary and semi-automated trading systems as a self-funded trader. It was during this time period that I developed a systematic approach to analyzing and trading in the financial markets.

- **Developed** indicators and strategies using Tradestation EasyLanguage
- **Built** a framework built on NinjaTrader 8 to feed my statistical models hosted in an external C# .NET application
- **Scripted** analysis tools for statistical research in MATLAB, C++, and .NET to find an edge in price data

Lead Controls Engineer at Sorenson Engineering Inc. **Sep. 2014-Mar. 2016**

Leading controls software development for high-volume manufacturing. I developed core software and worked closely with Mechanical Engineers to build proof of concept products (R&D environment).

- **Fieldbus Integration** – Integrating third-party hardware/software nodes into a controls network
- **Motion Control** – Kinematics, motor sizing, pick-n-place, multi-axis synchronization, and axis coupling
- **Vision Inspection** – Driving digital cameras (Cognex, Baumer/VeriSens) via native C++ SDKs
- **Eliminated** need for expensive camming software license and a measurement sensor.
- **Increased** machine PPM by decreasing rotor inertia ratio by 140% for tighter position control (VSIII*)*