John Parrott

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Education

University of South Florida (USF) Tampa, FL   **Aug 2020 - May 2025**
Bachelor of Science, Computer Science
Honors: USF Directors Scholarship, Florida Bright Futures Scholarship, Schnabel-Sparacio Scholarship

Technical Skills

Backend Development: Micronaut (Java), ExpressJS, NodeJS, REST APIs, Postman, Docker, Linux/WSL
Frontend Development: React, Next.js, Tailwind CSS, Figma
Database: PostgreSQL, SQL Schema Design, MongoDB
Programming Languages: Java, JavaScript, TypeScript, Python, C#, C++, C
Tools & Dev Practices: Git, Agile/Scrum

Project Experience

Tampa General Hospital Equipment Optimization System

Electron, Node.js, React, Python
- Analyzed hospital equipment movement patterns using graph-based algorithms to resolve inefficient paths, processing **50K+ data points** and achieving **~20% reductions in retrieval distances**.
- Modeled facility layouts as weighted graphs in **Python/NetworkX** to pinpoint inefficient routes and recommend optimized placements, improving access times by **15–25%**.
- Built a data pipeline that transformed raw CSV logs into actionable weekly, monthly, and quarterly usage insights, supporting analysis across **1,000+ devices**.

Student Management System

Java, TypeScript, Micronaut, PostgreSQL, React, AG Grid
- Designed a multirole backend architecture with **React + Micronaut** to streamline student management workflows, supporting **hundreds of student records**.
- Implemented **30+ protected routes** with RBAC to enforce granular permissions and improve overall secure API design and backend validation.
- Built data-rich API endpoints to power advisor and instructor dashboards, efficiently serving **100+ active student records** in real time and providing fast access to schedules, grades, alerts, and academic status.
- Developed reusable service/repository layers for course/department management and relational modeling.

Docoppolis Web Server - C# Custom HTTP Server

.NET, HttpListener API, HTML/CSS/JS
- Engineered an HTTP server using only **C#** standard libraries and **HttpListener**, deepening understanding of low-level routing, request handling, and core backend architecture.
- Built a custom routing engine supporting GET/POST/PUT requests with RBAC and CSRF protections, implementing security and workflow features typically handled by full frameworks.
- Designed reusable server components to streamline backend development workflows, reducing feature iteration time by **~30%** and improving long-term maintainability.

Stock Visualization & Analysis Tool

C++/CLI, WinForms, WinForms Charting API
- Processed and visualized **5,000+ OHLCV datapoints** by building a CSV-driven importer that converts raw historical stock data into strongly typed candlestick objects, improving the accuracy of data inspection and debugging workflows.
- Implemented an extensible **SmartCandlestick** model that computes ranges, tails, and pattern classifications (Doji, Hammer, Marubozu, etc.), enabling automated detection of **7+ key price-action patterns** used in technical analysis.
- Developed an interactive candlestick charting system using the **WinForms Chart API**, normalizing scale, drawing peak/valley overlays, and binding data for real-time updates—reducing visual-analysis time by **50%+**.