MATTHEW FARRELL

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EDUCATION

Marist College, Poughkeepsie, NY   **May 2022**
Bachelor of Science, Computer Science
Minor(s): Cybersecurity, IT, IS
GPA: 3.34

RELEVANT EXPERIENCE

Full Stack Client Application
- Sleep analysis website for a client who wanted to be able to connect their Oura Ring (popular sleep tracking device) with their account.
- Data was then analyzed through a machine learning algorithm to predict trends and return a report back to the user.
- *Frontend:* Bootstrap *Backend:* Flask, PostgreSQL, Oura API, Python, Pandas

Compiler Design
- Constructed a compiler in Java that takes in a modified "C" language from an LL1 grammar as input.
- Split into four stages of compilation: lexical analysis, parsing, semantic analysis, and code generation.
- Created token stream, abstract/concrete syntax trees, and symbol table.
- Outputs 6502 opcodes if all stages of compilation passed with 0 errors.
- Code generated was then sent through a custom OS to run the program.

Software Development
- Created a virtual 6502 processor written in TypeScript and running on server side JavaScript in Node.js
- Complete 6502 architecture and instruction set.
- CPU pipeline including fetch, multiple decode/execute, write back, and interrupt handling steps.

Database Management
- Implemented a lost/found database and web frontend using PHP and MySQL.
- Designed a large relational database for a multiplayer video game enterprise.

Personal Portfolio Website
- Created a portfolio website to provide a brief introduction of my background, skillset, and aspirations.
- URL: *http://www.farrellfolio.com*

TECHNICAL SKILLS

Languages: Proficient in **Java**, **JavaScript**, **Python**, **HTML/CSS**, and **SQL**

Applications: React, Node.js, Flask, Vue.js, PostgreSQL, Git, Jupytr Notebook

Operating Systems: Windows, Linux

Methodologies: SCRUM, Agile, Data Analysis, Algorithm Design, Complexity Analysis, OOP

ABOUT ME

- Began writing code on jailbroken iPad/Android tablets that allowed me to gain coins (in app currency) of a popular mobile game at an exceptional rate.

- I turned this abundance of coins into a large social media following and a five-figure business at the age of 14. The full story is displayed in detail on my portfolio: (*http://www.farrellfolio.com*).