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Eric Vignola

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Experience

Manager of Software Engineering **Council of the Great City Schools** **Feb 2018 - Present**

In this role I have grown the most as a software engineer by far. This is my first position as the lead engineer designing a technology strategy for an organization. This position is also a culmination of all of my previous experiences. Visualizing data as an undergraduate researcher and learning interaction design by developing video games prepared me for creating interactive data dashboards. Interoperating with existing AI systems taught me how to create robust technology architectures that involve multiple code bases. Finally, I am still able to make a social impact with my code by working at The Council of Great City Schools to improve public education. Presently, I am continuing to develop professionally in this role by taking courses in machine learning and supervising contractors.

- Reduced data analysis time for annual report from ~12 weeks to 1 hour by designing and developing a C# application to aggregate and clean data.
- Created an algorithm that allows users to aggregate data from 70+ unstructured spreadsheets into a single structured file for analysis. I used the strategy pattern and custom data structures to ensure that this algorithm can be easily updated to handle future spreadsheets as well.
- Used C# and Javascript to create an application that generates an annual report that visualizes over 2 million data points. All of the data visualizations in this report were created programmatically using D3.js. Additionally, I used regular expressions to dynamically generate all of the text in this report.
- Supervised 1 undergraduate student who directly reported to me. I also designed a computer science curriulum for this student to work through during their summer internship.
- Implemented the Oauth standard to establish single sign on across multiple open source projects using React, Linux, Digital Ocean, and Docker.

Undergraduate Researcher **NASA** **May 2016 - Sept 2016**

This position marked a transition for me as a programmer. Previously I had worked on smaller projects that did not have to interoperate with any external data systems. Programming to interfaces and keeping code flexible as the needs of users changed was a must. In this project, I learned to architect a system, leverage design patterns, and take advantage of UX/UI patterns to meet the needs of the research project.

- Awarded $12,000 grant to create an authoring tool for artificial intelligence. The team consisted of 3 students and 2 supervising professors.
- Implemented a collapsible tree diagram using d3.js to visualize social relationships between entities in a video game.
- Implemented a full desktop application for visualizing data from an artificial intelligence system using Electron, Aurelia, Grunt, and D3.js.

Web Developer **American University Game Lab** **May 2015 - Sept 2015**

This was my first experience creating a software project without the guidance and clear scope of a classroom project. Writing maintainable and readable code was a high priority on this project because 4 developers were working on the codebase simultaneously. As a result, I improved rapidly as a developer by learning to write readable and maintainable code, communicating with team members, and regularly updating our supervisors on the project.

- Worked on a team of 3 other students and developed an official mobile game for the Smithsonian American Art Museum.
- Developed and deployed a web server and mobile website so museum visitors could access this game on their mobile device.

Projects

- **KPI Report Generator:** In this solo project I used C#, Javascript, and D3.js to create an application that generates an annual report that visualizes over 2 million data points.
- **KPI Data Cleaner:** I built this application to clean and store over 1 million data points. This application then uses the existing data points to calculate new data points for an annual report. This project uses C# and dotnet CLI.
- **Survey Aggregator:** This was an individual project in which I created an application that aggregates data from 70+ unstructured spreadsheets into a single structured file for input into other applications. The survey aggregator uses C# and dotnet CLI.

Awards

- **Eric Dybsand Memorial AI Scholar (2017):** Each year 1 student who demonstrates an interest in AI is chosen for this scholarship to attend The Game Developers Conference. This student receives mentoring from AI industry professionals in the games industry and other AI related opportunities. Finally, this student also receives the benefits of the IGDA Scholars Program, "one of the most coveted awards for promising students in game development".
- **Frederick Douglass Distinguished Scholar:** Selected as 1 of 4 out of a 2,000 person applicant pool for this 4 year undergraduate full scholarship program.
- **Second Place, National Urban League Hackathon for Social Justice:** Won 2nd prize and $1,000 for creating an app that used procedural content generation to help teach STEM.

Technology/Languages

- Languages: C# | JavaScript | HTML | CSS
- Technologies: React | Github | Tableau | Node.js | Webpack | Docker

Education

Washington, DC **American University** **Fall 2013 - May 2017**

- Bachelor of Science in Computer Science, GPA: 3.81/4.0