Ryan McPherson

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Education

University of Florida, BS in Computer Science (GPA: 3.82/4.0) **August 2020 - Present**

- **Awards:** Herbert Wertheim College of Engineering Dean's List (Fall 2020, Spring 2021, Fall 2021), Florida Bright Futures Academic Scholar

Skills

- **Languages/Frameworks/Tools:** C++, JavaScript, Node.js, React.js, Express.js, Git, Solidity, HTML, CSS, Java, Python, MATLAB, Affinity Designer
- **Experience Doing:** Full-stack web development, building RESTful APIs, cloud service deployment, Agile and Scrum methodologies, test-driven development (TDD), smart contract development
- **Relevant Coursework:** Programming Fundamentals 2, Discrete Math, Data Structures and Algorithms, Computational Linear Algebra, Intro to Software Engineering, Intro to Computer Organization

Professional Experience

Tech Lead, Software Engineering Club (SEC) **September 2021 - Present**

University of Florida, Gainesville, FL

- Developed in an Agile team of over 15 developers on Clubfinity, a mobile app built using the MERN stack that offers a single platform where all college clubs and activities are listed for user convenience
- Collaborated in a group of 4 developers on the data scrapping user story to automatically populate the app with club information from separate platforms like Discord, Google Calendar, Slack, and Facebook
- Held weekly Scrum standup with team members to discuss progress and updates on the latest task

Student Mentor, STEM Summer Institute **My 2018 - June 2018**

Western High School, Davie, FL

- Mentored over 30 young aspiring STEM students in the engineering fields of aerospace and rocketry
- Earned valuable teaching and mentoring experience through directing students in small groups of 5

Project Experience

Six Degrees of Spotify **December 2021**

- **Tools:** React.js, CSS, Node.js, Express.js • **Visit:** sixdos.herokuapp.com • **Repo:** six-degrees-of-spotify
- Developed both frontend and backend components of a web app that generates a graph based on Spotify's "fans also listen to " feature and finds the shortest path between two Spotify artists
- Constructed a RESTful API to return the computed shortest path and random artists from the database
- Implemented breadth-first search (BFS) on an unweighted, undirected graph with ∼10,000 vertices representing artists and ∼100,000 edges representing a connection via the "fans also listen to" feature
- Developed a testing suite with Jest to ensure all API routes returned and updated information correctly
- Deployed the application to Heroku's cloud service using the Heroku CLI

AVL Tree Container **October 2021**

- **Tools:** C++, Catch2 • **Repo:** avl-tree
- Implemented a self-balancing AVL Tree to store users' names and id numbers to solve the issue of slow lookup times in tree data structures, thus reducing linear lookup times to logarithmic lookup times
- Developed with test-driven development at the forefront to ensure functional software for the end-user
- Wrote 11 unit tests with the Catch2 framework to ensure each tree method functioned as intended

Assignments, but Automated **September 2021**

- **Tools:** JavaScript, Node.js • **Repo:** assignments-but-automated
- Developed a method to automatically retrieve over 100 assignments from Canvas LMS and upload them to a Notion database for the user's convenience
- Executed HTTP GET and POST requests through publicly available SDKs
- Completed a code review of another developer's pull request and successfully merged the changes