Colin McNally

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EDUCATION

Worcester Polytechnic Institute (WPI)   *Worcester, Massachusetts*

B.S. Computer Science   ***Aug 2023 - Present***

RELEVANT COMPLETED COURSEWORK

Introduction to Program Design, Object-Oriented Design Concepts, Systems Programming Concepts, Introduction To Machine Organization and Assembly Language, Discrete Mathematics, Algorithms, Database Systems I, Foundations Of Computer Science

SKILLS & INTERESTS

Programming Languages: Java, Dart, JavaScript, TypeScript, SQL, C, C#, C++, Racket, R, Python
Frameworks: ReactJS, NextJS, Flutter, React Native
Applications: Github, Git, VSCode, IntelliJ, Android Studio, Firebase, Oracle, Node.js, Figma, SQL Developer, LaTeX, Microsoft Office
Certificates: WPI Introduction to Python, WPI Introduction to LaTeX
Interests: Software Technology, Volleyball, Soccer, Golf, Weight-Lifting, E-Sports, Chess

PROJECT EXPERIENCE

VisMath | ReactJS, JavaScript, TypeScript, Python   ***April 2025 - Present***
- Developed an interactive math visualization app that dynamically renders equations as animated graphs for educational purposes.
- Created responsive UI using ReactJS and Math.js for equation parsing; implemented visualization system with Recharts library.
- Implemented a GPT-based agent to generate tailored mathematical insights in response to user interactions.
- Built a Python backend API to handle complex calculations; designed modular component architecture for maintainability.

Image & Matrix Transformations | Python   ***Nov 2024 - Dec 2024***
- Developed a program to scale, rotate, and reflect images using Python and linear algebra.
- Implemented matrix transformation functions to manipulate pixel arrays, deepening understanding of coordinate geometry in image processing, and problem solving.

Depress-Minus App | Flutter, Dart, NoSQL   ***Jan 2022 – June 2023***
- Developed a mental health app with features like journaling, mood tracking, and stress relief techniques.
- Created UI in Flutter and Dart; built the database model in NoSQL and Firebase; tested using Android Studio.
- Integrated user authentication, data persistence, and mood trend analysis features to improve user experience and retention.

Solar System Simulation | JavaScript   ***Jan 2022 - Feb 2022***
- Created an interactive 2D animation simulating planetary orbits, applied mathematics such as Calculus and Linear Algebra to model realistic movements. Mastered the use of Sine and Cosine for precise circular orbits.
- Developed using JavaScripts built in canvas feature, as well as HTML and CSS for styling the front-end aspects.

WORK EXPERIENCE

Code Ninjas   Fairfield & Trumbull, Connecticut

STEM Instructor   ***Dec 2021 – May 2024***
- Taught children programming concepts through Python, JavaScript, C++, C and block-based coding platforms while maintaining a positive and safe learning environment.
- Cultivated critical thinking and problem-solving skills by guiding students through debugging processes, algorithm development, and project-based learning experiences.
- Implemented differentiated teaching strategies to accommodate diverse learning styles in mixed-ability classrooms while adhering to child safety protocols and educational best practices.