

Work Experience | ~3 years of experience**Software Engineer** | May 2019 – Present

Core BTS | Fort Wayne, Indiana (Remote)

- Lowered initial page load time of a web application's highest traffic page by 94% through optimizing SQL queries, dramatically reducing SQL calls, adding pagination, and introducing caching
- Accelerated the time it takes to run a common manufacturing process by 411% through creating an algorithm that automates an efficient strategy for creating holes in pieces of metal
- Saved an estimated 250 worker-hours per week by re-architecting an interaction between 2 applications to allow for automation of manufacturing parts across different physical manufacturing locations
- Championed initiative for decreasing maintenance costs by 20% through abstracting an often changed and mission critical 6000 line class into small, modularized classes in a layered architecture—that are under automated testing
- Devised plan and proof of concept for improving productivity and developer onboarding via migrating a 10-year-old legacy Knockout application to React rodneymcquain.com/blog-posts/integrating-react-into-a-knockout-based-app
- Improved development feedback loops by minimizing the time it takes to run integration tests from ~2.6 minutes to ~20 seconds and adding the ability to make the tests runnable on previous versions of the software
- Mentor colleagues informally and as a part of a formal mentorship program rodneymcquain.com/blog-posts/interacting-with-the-codebase rodneymcquain.com/blog-posts/creating-code-reviews-that-people-interact-with
- Helped reduce enrollment attrition by ~23% via giving university students insight on the software industry in a talk about the importance of understanding the business domain linkedin.com/feed/update/urn:li:activity:6859220639400783872
- Cultivate shared ownership, minimize ambiguity, and empower teammates to ideate on our processes by organizing periodic working agreement meetings

Projects**NBG Production Control Suite** C#, Microsoft Azure, REST API, Microsoft SQL Server, Blazor, JavaScript, SignalR, Canopy, Xunit Professional Project for Nucor (Fortune 100 company—the #1 steel producer in the United States) | April 2020 – Present

I build internal web and desktop applications that support the business's needs for detailing, manufacturing, and shipping

~18.6 million tons of parts annually, across their many physical locations. My main efforts focus on automating tedious processes, improving the efficiency and performance of their applications, consolidating software to support the organization's various acquisitions, and re-architecting existing solutions to improve their reliability, maintainability, and scalability.

The Digit-Inator

TypeScript, ReactJS, SCSS Modules, Jest, React Testing Library, Cypress, Python, Tensorflow

Personal Project | August 2020 – December 2020

The Digit-Inator makes its best guess at what digit a user draws through machine learning (ML).

- Transformed digit-recognition accuracy from ~35% to 99% by compressing a user's drawing to align with the ML model's dataset via minimizing stretching, maintaining aspect ratio, correcting color, decreasing drawable space, adding padding around the digit, increasing brush size, and removing noise to support detection for drawings of all sizes
- Decreased effective time until a user can run a detection by 91% via pre-loading and caching the ML model
- Increased confidence in modifying the ML model or drawing compression code by writing full end-to-end tests that cover 100% of detectable digits from the input of the user's drawing to the output of the detection for the digit

digit-inator.netlify.app | github.com/RodneyMcQuain/Digit-Inator**Melee CSS Color Changer**

Java, JavaFX

Personal Project | May 2019 – July 2019

Allows users to customize the Character Select Screen (CSS) for Super Smash Bros. Melee in various and vibrant ways.

- Lessened the time it takes to fully customize the CSS from ~35 minutes to ~2 minutes by automating the tedious process of identifying and altering specific bytes in a file and eliminating the need for low-level technical knowledge from the user

rodneymcquain.com/blog-posts/coloring-in-a-20-year-old-video-game | github.com/RodneyMcQuain/Melee-CSS-Color-Changer**Education****Bachelor of Science Degree in Computer Science** | Minor in Mathematics

Purdue University Fort Wayne

GPA: 4.0 / 4.0 | Graduated with "Highest Distinction" | Awarded best senior capstone project of the year by faculty and peers

Skills

C#, JavaScript, TypeScript, Python, Java | Microsoft SQL Server, MongoDB | Microsoft Azure | REST API, GraphQL | test-driven development, unit testing, integration testing | continuous integration, continuous deployment | ASP.NET Core, ReactJS, GatsbyJS, Blazor, CSS, SCSS, WebSockets | SOLID object-oriented design principles, Gang of Four design patterns | Agile, Scrum