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Matthew Brown

github.com/mushakushi
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Education

University of Virginia | Bachelor's in Computer Science **Expected Graduation May 2027**

- Software Game Development Club, Cracking the Interview Club

Projects

Personal Portfolio **NextJS, Docker, SQLite, AWS Amplify, TypeScript, CSS**

- Designed a NextJS frontend and backend with a stream-lined graphical interface and short loading times, highlighting features and contemplations about gameplay programming in various engines and languages.
- Leveraged Docker and a RESTful SQLite backend API to easily store and modify site content, removing the need to directly modify source code.
- Designed a scalable and secure cloud infrastructure on AWS Amplify, ensuring high availability and reliability for business-critical applications, while implementing cost-effective strategies through serverless computing code optimization.

Work Experience

Software Developer | C#, Python, SQL (MongoDB, PostgreSQL), HTML, TypeScript, AWS **Aug. 2022 — May. 2024**
DOMA Technologies

- Developed a full-stack document indexing tool leveraging computer vision and machine learning to automate the conversion of client physical records to digital, reducing the necessary processing time by over two hours per 1,000 documents.
- Developed administrative and database management tools, using React and Node while leveraging SSR and material design to streamline content for end users, minimizing load times, improving search, and providing security.
- Augmented the codebase of a proprietary web application from JavaScript to TypeScript, adding documentation and type safety to eliminate all frontend type errors over 500 files.

Game Director | "Zombie Crossing" | Unity, C#, HLSL **Jan. 2024 — May. 2024**

- Led the development of a full-stack video game project from concept to launch, overseeing cross-functional teams and driving innovation through agile methodologies.
- Wrote GLSL shaders using a modern graphics pipeline, ensuring performance and compatibility with major gaming platforms, to create gameplay effects and transitions.
- Added a controller agnostic multiplayer input layer, game save system along, and the base game architecture to manage accurate collisions, menus, audio, and the game state with appropriate automated tests to ensure functionality.

Game Developer | "Gravitational Wave Surfer" | Unity, C#, HLSL **Jun. 2024 — Aug. 2024**

- Developed a 3D educational game about black holes in collaboration with the UVA physics department that involved simulating black holes, curved spacetime, and gravitational waves.
- Created a Unity UI XML framework to facilitate the rapid development of extensible, context-aware menus, which was additionally published online as third-party package.

Technical Skills

Languages: HTML5, JavaScript, TypeScript, CSS, C++, C#, Java, HLSL, SQL, Git
Frameworks: React, Node.JS, NextJS, Unreal, Unity
Tools: AWS, Docker, React, Bootstrap, jQuery, NodeJS, Tesseract, Textract