Dan **Miller**

SOFTWARE ENGINEER · LIFELONG LEARNER · GAME DEVELOPER

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"Be the change that you want to see in the world."

Summary

Seeking a lateral move into the game development industry as an Engine programmer. I thrive on solving complex problems and am looking for a team that values autonomy and creativity. Expert in C#, Unity, Terraform, Dotnet Core, and Typescript. Currently learning Neovim and Rust.

Most recently I was a senior software engineer at financial startup Dispute.com and founder of Fraculation LLC. I have 9 years of professional experience and have been writing code since 2010. My experience is varied, starting with full stack development in C# and Angular across both AWS and Azure, then teaching myself high-performance Unity and Rust. Over the past year I have organizing teams around 8 Game Jams with varied levels of success.

Skills

Languages
- C#
- ShaderLab, HLSL
- Rust, Axum, HTMX
- Typescript, Sql

Engines/Frameworks
- Unity Jobs + DOTS
- GPU Acceleration
- Unity Custom Editors
- ShaderGraph, VFX Graph

Platform Engineering
- Github Actions
- Git, Perforce
- Terraform, Azure, AWS
- Code Generation

Work Experience

Dispute.com
Milwaukee, Wisconsin (Remote)

SENIOR/LEAD SOFTWARE ENGINEER — *Feb. 2023 - Present*

- Architected and developed secure, scalable systems resulting in 90% reduction in time spent on manual intervention in the core data pipeline.
- Onboarded a team of 3 developers and led towards a culture of communication and excellence.
- Introduced Auth0 for client authentication and authorization, automated management via Terraform.
- Created extensible system to manage integrations with CRMs and Chargeback Protection platforms (Konnektive, Sticky, Ethoca, Verifi)
- Decreased the the need for manual intervention by 80% in ingestion pipelines, resulting in faster and more reliable data processing.
- Created CI/CD pipelines in GitHub Actions which deployed applications via Terraform and released internal shared Nuget and NPM packages.
- Skills: C# • Github Actions • Leadership • Rust • SQL Server • Durable Functions • Application Insights • Entra Id/AAD

Fraculation LLC
Milwaukee, Wisconsin

GAME DEVELOPER, OWNER — *Sep. 2021 - Present*

- Implemented a true-to-life Mendelian genetics system which faithfully recreates Punnet Square outcomes using C#.
- Built an ECS system to simulate over 10,000 3D enemies and projectiles in real time at >60FPS as part of a tower defense game.
- Developed reusable open-source libraries, reducing code duplication by 60% across game jams. Addressing common needs such as Math, Save system, Logging, Scriptable variables, Leaderboards, and Unit Testing
- Used Async/Await to manage game and UI logic with a Task-based asynchronous pattern (TAP) in Unity.
- Built leaderboard API in Rust using Axum, Serde, HTMX, Sqlx, and Tokio.
- Autogenerated C# API from an OpenAPI specification with openapitools for use in Unity.
- Skills: Unity • C# • Team organization • Rust • Real-time parallel algorithms • Data-oriented Design • ECS • DOTS • Jobs • Burst Compiler

Flite Golf & Entertainment
Milwaukee, Wisconsin (Remote)

UNITY IMPLEMENTATION SPECIALIST — *Sep. 2022 - Feb. 2023*

- Provided company-wide guidance on C# and Unity best practices as the resident Unity expert.
- Reduced build times by 20% restructuring project code into assembly definitions, enabling faster iteration times.
- Introduced unit tests to an untested codebase.
- Integrated Azure Application Insights, decreasing log collection time by 73%, significantly improving the troubleshooting process.
- Managed client relationships with the owner and employees of Luxe Golf, which hosted our applications.
- Led towards a culture of documentation by creating standardized test cases, a knowledge base, and an onboarding guide.
- Skills: Unity • C# • QA Process Improvement • Azure App Insights

Centare (Milwaukee Tool, One Key)
Milwaukee, Wisconsin

AWS CLOUD ENGINEER — *Jan. 2021 - Jun. 2021*

- Used CQRS and Event Sourcing to build an ETL pipeline from SQL Server into Elasticsearch, ingesting millions of positional data points per day
- Learned AWS Lambda and the Kinesis Consumer Library in Python to build a serverless data pipeline
- Skills: Python • Terraform • Docker • C# • AWS Lambda • Dynamodb • Kinesis

Centare (API Healthcare)
Milwaukee, Wisconsin

FULL STACK ANGULAR DEVELOPER
Sep. 2017 - Dec. 2020

- Modernized existing web applications into Angular Single Page Applications, leading and documenting design decisions.
- Converted legacy C# on-premise modules to run on the Azure cloud.
- Successfully onboarded and mentored two offshore teams, streamlining integration into the new project ecosystem and improving project delivery timelines.
- Mentored junior team members through pair programming, code reviews, and one-on-one mentoring.
- Managed automated build and deployment in Jenkins.
- Skills: Angular • Typescript • RxJS • Cypress • C# Web API • Agile • Jenkins

Brady Corporation
Milwaukee, Wisconsin

IT DEVELOPMENT INTERN
Jun. 2015 - Dec. 2016

- Created bespoke implementation of the Observer pattern for use in an AngularJS application.

MSOE
Milwaukee, Wi

B.S. IN SOFTWARE ENGINEERING
Sept. 2012 - May 2017

Projects

The Last Storm Crystal
Brackeys Jam 2024.2

HTTPS://LIMEBLOSSOMJAMS.ITCH.IO/THE-LAST-STORM-CRYSTAL
Sept. 2024, 7 days

- Created a deck-building roguelike tactics game, building on top of a previous tactics game. Overhauling mechanics and creating new abilities.
- Leveraged and modified existing code to efficiently meet our needs without rewriting.
- Ensure the game and AI behaved correctly as large changes to the codebase were made through test-driven development.
- Skills: C# • Test driven development • AI • Library development

The Essence of Tactics
Pirate Software Jam 15

HTTPS://LIMEBLOSSOMJAMS.ITCH.IO/THE-ESSENCE-OF-TACTICS
Jul. 2024, 14 days

- Built a Tile-Tactics game with a game designer and artist, building on shared code from a previous jam.
- Employed Data-driven design by configuring all abilities via ScriptableObjects, exposing these tools to the game designer.
- Created pathfinding and optimizing AI based on a custom fitness function.
- Skills: C# • Data-driven design • Test driven development • AI • Library development

Takoyaki Volleyball Club
Top 6%, Pixel Jam

HTTPS://DSMILLER95.ITCH.IO/TAKOYAKI-VOLLEYBALL-CLUB
May. 2024, 8 days

- Worked as sole programmer with two artist-designers to build a 2D action game.
- Cut down on time spent configuring prefabs by 75% by developing extensive in-editor tooling to allow the designer to iterate rapidly.
- Created a distortion shader to simulate the effects of droplets in water.
- Modeled UI interactions with async/await and Task-based asynchronous pattern (TAP) in Unity.
- Skills: Communication • C# • Data-driven design • Unity • Developer tooling

Mosh Pint
Top 13%, Ludum Dare 54

HTTPS://GITHUB.COM/DSMILLER95/LUDUM-DARE-54
Oct. 2023, 4 days

- Organized team of 6 on a 4-day project.
- Learned Godot during the jam to create a novel top-down action puzzler game.
- Optimized expensive physics queries by using spatial hashing, allowing large numbers of actors to interact with each other.
- Skills: Leadership • C# • Godot • Active Learning

Disconnect
Top 3%, GMTK Jam 2023

HTTPS://SPIKEDEVELOPS.ITCH.IO/DISCONNECT
Jun. 2023, 48 hours

- Coordinated team of 3 software developers to rapidly collaborate without conflicts on a 48-hour timeline.
- Created a game with 0 logic bugs at launch through Test-Driven development when creating both game logic and AI.
- Skills: Leadership • Test driven development • C#

L-System Language Execution Engine
Fraculation LLC

HTTPS://WWW.FRACULATION.COM/BLOG/LINDENMAYER-IMPLEMENTATION
Dec. 2020 - Jun. 2023

- A custom implementation of L-Systems including a tokenizer and a multithreaded interpreter.
- Built with Unity's Jobs system to enable multithreading, and rendered in Unity as Meshs.
- Presented at M+Dev in 2022.
- Experimented with Rust interoperability in Unity to improve performance.
- Skills: Unity • C# • Rust • Developer Tooling • Library development • Jobs • Burst Compiler • Multithreading • Performance Optimization