

# Dan Miller

SOFTWARE ENGINEER · LIFELONG LEARNER · GAME DEVELOPER

✉ dsmiller95@gmail.com | 🏠 www.fraculation.com | 📷 dsmiller95 | 🌐 the-daniel-miller

“Be the change that you want to see in the world.”

## Summary

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, most recently organizing teams around Game Jams.

Currently learning Vim, Rust and Game Development. Expert in C#, Unity, Dotnet Core, Typescript, and Terraform. Looking to make a lateral move into games or adjacent industry as an Engine programmer, Tools engineer, Systems designer, Backend engineer, or generalist programmer. I thrive on solving complex problems and am looking for a team that values autonomy and creativity.

## 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 realtime 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)

FULL STACK ANGULAR DEVELOPER

Milwaukee, Wisconsin

Sep. 2019 - 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

IT DEVELOPMENT INTERN

Milwaukee, Wisconsin

Jun. 2015 - Dec. 2016

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

## MSOE

B.S. IN SOFTWARE ENGINEERING

Milwaukee, WI

Sept. 2012 - May 2017

# Projects

## Glutton

[HTTPS://DSMILLER95.ITCH.IO/GLUTTON](https://DSMILLER95.ITCH.IO/GLUTTON)

GMTK 2024

Aug. 2024, 4 days

- Led a team of 5 developers and artists, resulting in a polished top-down shooter prototype, which received positive player feedback for its art direction and style.

## The Essence of Tactics

[HTTPS://LIMEBLOSSOMJAMS.ITCH.IO/THE-ESSENCE-OF-TACTICS](https://LIMEBLOSSOMJAMS.ITCH.IO/THE-ESSENCE-OF-TACTICS)

Pirate Software Jam 15

Jul. 2024, 14 days

- Built a Tile-Tactics game with a game designer and artist, on top of a custom functional game logic layer built in Gobbies.
- Configured all abilities in a data-driven way via ScriptableObjects, exposing these tools to the game designer.
- Created pathfinding and optimizing AI based on a custom fitness function.

## Takoyaki Volleyball Club

[HTTPS://DSMILLER95.ITCH.IO/TAKOYAKI-VOLLEYBALL-CLUB](https://DSMILLER95.ITCH.IO/TAKOYAKI-VOLLEYBALL-CLUB)

Top 6%, Pixel Jam

May. 2024, 8 days

- Worked with two artist-designers to build a 2D action game.
- Developed extensive in-editor tooling to allow the designer to iterate rapidly, cutting down on time spent configuring prefabs by 75%.
- 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.

## Gobbies Stole my Ruins

[HTTPS://LIMEBLOSSOMJAMS.ITCH.IO/GOBBIES-STOLE-MY-RUINS](https://LIMEBLOSSOMJAMS.ITCH.IO/GOBBIES-STOLE-MY-RUINS)

16th place, Dungeon Crawler Jam

Mar. 2024, 9 days

- Architected a functional style game kernel layer allowing complete testability of game logic.
- Used Test-Driven Development to drive game logic changes, decreasing bugs by 80%, resulting in a game with 0 known bugs at launch.

## Mosh Pint

[HTTPS://GITHUB.COM/DSMILLER95/LUDUM-DARE-54](https://GITHUB.COM/DSMILLER95/LUDUM-DARE-54)

Top 13%, 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.

## Disconnect

[HTTPS://SPIKEDEVELOPS.ITCH.IO/DISCONNECT](https://SPIKEDEVELOPS.ITCH.IO/DISCONNECT)

Top 3%, GMTK Jam 2023

Jun. 2023, 48 hours

- Coordinated team of 3 software developers to rapidly collaborate without conflicts on a 48-hour timeline.
- Employed Test-Driven design when creating both game logic and AI, resulting in a game with 0 logic bugs at launch.

## L-System Language Execution Engine

[HTTPS://WWW.FRACULATION.COM/BLOG/LINDENMAYER-IMPLEMENTATION](https://WWW.FRACULATION.COM/BLOG/LINDENMAYER-IMPLEMENTATION)

Fraculation LLC

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 Meshes.
- Presented at M+Dev in 2022.
- Experimented with Rust interoperability in Unity to improve performance.
- Skills: Unity • C# • Rust • Jobs • Burst Compiler