

Seth Anderson

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Objective

To develop software that makes peoples' lives better and to improve as a software engineer.

Languages

C++ (16yrs), C# (14yrs), Javascript (10yrs), SQL (8yrs), C (5yrs), Java (1yr)

Work Experience

Senior Software Engineer (Contract) – Stormhaven Studios – May 2020 - Present

Stormhaven Studios is an indie game development studio working on our debut title Embers Adrift which was released in 2022. Embers Adrift is an MMORPG made in Unity.

The only other full-time programmer aside from our CTO working on core game systems

- Implemented and maintained multiple complex feature systems, working with designers and writers to integrate their work and improve said systems
- Responsible for our social service—which handles a variety of social-related features involving complex player state management and real-time communication with game clients—as well as all the associated UIs. This service was implemented in C# using modern .NET, hosted on a Linux machine within a Docker container and utilizing the TPL to perform most actions asynchronously
- Monitored logging and player reports to find and address problems as they arose, including multiple investigations to determine whether certain events were caused by logic errors or player behavior

Senior Software Engineer – SmartThings – January 2019 - January 2020

SmartThings is a leading IoT / home automation company providing devices and backing cloud services to end consumers and businesses. These backing services are global and handle extremely high request volume.

A senior engineer on the team responsible for the core of the SmartThings infrastructure

- Brought myself up to speed on a completely foreign stack (Java, Groovy, Ratpack, Gradle, Grails, etc.) while also relearning how to computer (first time using a Mac) and diving into a very complex ecosystem with many different components: modern, legacy, and external
- Worked to transition central platform logic from a legacy monolith to microservices
- Deployed services to AWS using Terraform and managed those deployments via Spinnaker
- Participated in team triage, tracking down issues presented with information far removed from our team's problem domain and either fixing them or passing them along to the relevant team
- Implemented diagnostics utilizing SumoLogic for log aggregation and DataDog for metrics, alerting, and dashboarding
- Participated in the on-call rotation for our team: diagnosing and counteracting live production issues in real-time

Senior Software Engineer (Contract) – Novus Media – May 2018 - December 2018

Novus Media is an advertising and marketing firm which connects advertisers with the publications needed to advertise their products and provides valuable insight into market trends for those advertisers.

A senior engineer brought on board to help the team push forward with new technologies and practices

- Provided insight into the benefits and drawbacks of the various options available to the team as they move into modern development practices
- After identifying the team's desired path, helped the team to achieve that vision utilizing tools such as Azure, Kubernetes, .NET Core, and various other technologies
- Implemented a new deployment process for projects based on these new technologies utilizing the team's existing toolchain (Azure DevOps, Octopus Deploy)
- Helped bring the team up to speed on new tools such as Docker, Minikube, Helm, etc.
- Helped outline the plan for how to establish a microservice architecture which fit their needs
- Created exploratory applications in Angular and React to help the team decide what solution to move forward with for front-end development

Previous Work Experience

Enterprise Architect – Lift Brands – May 2016 - May 2018

Worked to grow team and guided RESTful API designs (Backend, Security, Infrastructure, Mentoring)

Software Engineer – Zags – October 2015 - May 2016

Worked on insurance claim processing software with an emphasis on document generation

Programmer – Saturn Systems – June 2013 - June 2015

Worked on multiple staff augmentation projects building web applications (UI, Testing, Backend)

.NET Developer – United Healthcare – October 2011 - May 2013

Worked on automating data entry tasks including bulk ingest and per-spreadsheet automation

Significant Personal Projects

ECS Experiment – ~2 weeks of spare time – August 2024

An experiment with an ECS-based game “engine” focused on memory contiguity

- Written in C-style C++, focusing on keeping state and logic separate as a matter of thinking clearly about how memory is being laid out
- Component state supplied to systems in such a way as to minimize branching in the inner loop and to enable usage of SIMD intrinsics with zero preparation of the memory being operated on
- Memory segmented by “archetype” (i.e. collections of entities with all the same components)
- Using a third-party task scheduler to split work across multiple threads. Currently, work is split by archetype, with task ordering based on what components systems are defined to read/write
- Integrates the Tracy profiler so I can track how performance changes as I continue the project

Identity Provider – ~1 year intermittent development? – Ongoing

An implementation of the OAuth and OIDC specifications with internal accounts

- A modern .NET implementation of the OAuth 2.1 (draft) and OIDC specifications
 - Supports authorization code flow, client credentials auth, device code auth, resource owner credentials auth (disabled on recommendation of the OAuth 2.1 draft), and refresh tokens
 - JWT/Opaque tokens, PKCE, multiple client auth methods, frontend and backend logout
 - Currently supports TOTP for MFA with FIDO2/WebAuthN support underway
- Minimal frontend dependencies: just bootstrap and popper
- Accounts stored in PostgreSQL and instance coordination via memcached (for account lockouts, etc.)

3AKM LAN Party Site – ~7 months of spare-time development – ~2014

Hobbyist site with LDAP-driven user accounts and database-driven content

- Node.js back-end connected to a MongoDB instance
 - On startup, runs a Browserify bundling routine on client logic and minifies the resulting Javascript for delivery
 - Communicates with an Active Directory instance over LDAP to manage user accounts and permissions (an externally provided requirement), synchronizes user information with the application database for ease of relation to site content (directory remaining authoritative)
 - Heavy use of the bluebird library for promises to handle asynchronous operations
 - Automation of third-party applications relevant to our users (currently only one application, with interactions handled via a UDP socket interface)
- Separate user interfaces for the public site and an administrative portal both written using AngularJS with Bootstrap as a styling basis
- User registration process with reCAPTCHA and email verification

Other Notable Tools/Libraries

Qt, SDL, OGRE3D, Squirrel, OpenAL, TPL, LINQ, Jenkins, Azure DevOps, Git, Subversion, Visual Studio, GCC, Clang, CMake, Node.js, AngularJS, jQuery, Bootstrap, 3DS Max, Photoshop, Unity, Torque3D, Torque2D, Unreal 2.5, Linux, Docker, Kubernetes, ELK, Apache, MSSQL, MySQL/MariaDB, PostgreSQL, MongoDB, Cassandra, Memcached, WinForms, WPF, XAML, MVC, MVVM

References and/or an unabridged version of this resume are available upon request.