

# Aidan Fahey

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## EXPERIENCE

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### Software Engineer

Dec 2025 - Present

*The Kenerson Group*

*Athol, MA*

- Engineered **TreeWorks**, a custom ArcGIS Pro module, using the ArcGIS Pro SDK in C# / .NET that enabled arborists and foresters to map and manage tree assets, **reducing manual data entry time by 40%**.
- Developed **Cimplar**, Bay State Forestry's client property plotting and reporting tool, in C# / .NET, SQL Server, and React, complying with government regulations and **improving report generation and property plotting by 80%**.
- Designed and implemented a scalable data model for tracking tree condition, status changes, valuation metrics, and risk factors, **increasing dataset integrity and validation accuracy by 30%**.
- Built geoprocessing tools that automated proximity analysis to structures, utilities, and powerlines, **cutting risk-assessment workflow time from hours to under 5 minutes**.
- Implemented a risk-to-target calculation engine incorporating ISA/TRAQ methodology, **enabling users to generate standardized risk reports 3× faster**.
- Developed a valuation algorithm that automatically calculates tree economic value based on species, health, and site factors, **improving appraisal consistency by 60%**.
- Optimized spatial SQL queries and feature-layer indexing for **large municipal tree inventories (200k+ features)**, **improving application responsiveness by 45%**.
- Integrated offline GPS and mobile data-collection compatibility, **reducing field-to-office data synchronization errors by 70%**.

### Volunteer Software Engineer

May 2025 - Present

*Web Surfing Studios*

*Remote*

- Led end to end development of Web Surfing Studios' email infrastructure, **including 3 microservices**.
- Built REST APIs using C# / .NET Core with Entity Framework and MySQL to **consolidate email operations, improving security around AWS keys and eliminating 1,600+ lines of redundant code**.
- Implemented **AWS infrastructure** including Lambda (serverless), SQS, RDS, SES, and Elastic Beanstalk to **support horizontally scalable processing and reliable message delivery**.
- Designed a responsive React + Redux interface enabling admins to search, review, and delete emails without raw SQL queries, **accelerating email tracking by 500%**.
- Added global exception handling, partial batch responses, and queue-based retention for failed messages, **boosting tracking efficiency by 150%**.
- Created CI/CD pipelines in Azure DevOps integrating Git with multi-stage AWS deployments (Dev/Stage/Prod), **reducing deployment time by 90%**.

## PROJECTS

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### Gear Crossroads [gearchcrossroads.com](https://gearchcrossroads.com)

- Engineered a full-stack web application allowing users to create and share setups of various domains, such as gaming, photography, etc. Built with a C# / .NET backend, a Vue.js and Tailwind CSS frontend, and AWS RDS MySQL.

## EDUCATION

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### College of the Holy Cross

Worcester, MA

*Bachelor of Arts - BA, Computer Science & Religious Studies*

*Sep 2021 - May 2025*

## SKILLS

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**Languages:** C# / .NET, TypeScript, JavaScript, HTML/CSS, Python, C/C++, Java, Swift, PowerShell, YAML, SQL

**Frameworks:** ASP.NET Core, ASP.NET MVC, Vue.js, Tailwind CSS, Express.js, React Native, Expo, Bootstrap

**Libraries:** React, Redux, Axios, jQuery, Pinia, Socket.IO, PyTorch, NumPy, Pandas, Scikit-learn, Matplotlib

**Databases:** Microsoft SQL Server, PostgreSQL, MySQL, SQLite

**DevOps:** CI/CD Pipelines, GitHub Actions, Azure DevOps, Docker, Windows Server & IIS

**Misc:** Node.js, Entity Framework, Prisma, Windows Installers, Git (GitHub, GitLab, Gitea)

**AWS:** Elastic Beanstalk, Lightsail, AppConfig, Secrets Manager, SQS, SES, RDS, Lambda, S3, CloudWatch, IAM