Kailee Madden

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PROFESSIONAL EXPERIENCE

Atrius **Dec. 2022 - Present**

Senior Backend Software Engineer March 2025 - Present

- Conceptualized and implemented an end to end dynamic map routing solution in JavaScript, exposing an API that enables airports worldwide to **dynamically adjust navigation for ~750K daily users** based on construction, closures, or other modifications
- Led a team of five to architect and implement a high-performance API in C#/.NET, **unifying disparate AWS and Azure authentication systems** for a seamless user experience

Software Engineer Dec. 2022 - March 2025

- Improved system stability, **reduced technical debt**, and increased developer efficiency by overhauling legacy Node.js repositories—adding tests, CI/CD pipelines, IaC, dependency upgrades, and documentation
- **Optimized write API performance** in a serverless backend, achieving a **75% improvement** by leveraging esbuild for Lambda bundling, implementing provisioned concurrency, increasing memory allocation, and refactoring code to eliminate redundant authentication calls
- Implemented **scalable infrastructure-as-code** for APIs and serverless backends in AWS and Azure, leveraging Terraform, Bicep, Serverless, and CDK to streamline deployments and reduce provisioning time
- Designed a space utilization feature for a warehouse map app using **event-driven architecture**
- Engineered API endpoints to **efficiently query millions of historical Azure Digital Twins records,** leveraging KQL and Azure Data Explorer for optimized data retrieval and analysis

Intel **June 2022 - Aug. 2022**

Cloud Software Development Engineer Intern

- Automated server health checks using Python, PowerShell, and Bash to verify BIOS settings and installations, and developed C++ tests to track executable power consumption

Deloitte Consulting **Sept. 2019 - Sept. 2021**

Consultant in Data Engineering/Data Science May 2021 - Sept. 2021

- Engineered scalable data pipelines using Python and SQL, automating ETL to efficiently process millions of records, improving data reliability and system performance
- Led and mentored a team of three, driving project execution, managing client relationships, and owning end-to-end deliverables to ensure successful outcomes

Analyst Sept. 2019 - Sept. 2020

- Developed a **k-means clustering model**, and leveraged Tableau for data visualization, to enhance proactive aircraft maintenance analytics, reducing unanticipated flight aborts by **30%**

EDUCATION

Master of Science in Computational Science, Mathematics and Engineering **San Diego, CA**

University of California San Diego **Sept. 2021 - Dec. 2022**

Bachelor of Arts in Mathematics and History **Notre Dame, IN**

University of Notre Dame **Aug. 2015 - May 2019**

SKILLS

Languages & Frameworks: Javascript/Typescript, .NET, C#, Python, Node.js, React, SQL, C++

Cloud & Infrastructure: AWS, Azure, Terraform, Bicep, Serverless, CDK, Docker, Kubernetes, Git, Redis, Postgres