

Andrew Theken

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Summary:

Software Engineer with 15+ years of experience, a track record of collaboration, technical leadership, and championing continuous improvement. Seeking a role as a Site Reliability or Senior+ Engineer where I can apply my experience to improve team velocity and success.

Experience:

Wildbit, LLC | Software Architect

June 2014 to September 2021

My capstone achievement at *Wildbit* was leading a migration of our largest product, *Postmark*, from on-premises to *AWS*. The goals of this migration were to increase system reliability and team velocity, and through this effort we were successful in helping *Postmark* reach 99.999% uptime on public-facing services. [I wrote extensively about this work on the Postmark blog](#). The following are some additional details, and other accomplishments from my tenure at Wildbit:

- Led two-year project to split monolithic codebase into decoupled *Lambda* & *Docker*-based services, incorporating the following qualities:
 - Adopted *12 Factor App* practices for new services.
 - Designed and reviewed systems for idempotence, substantially improving system reliability and “self-healing” characteristics.
 - Substantially improved observability through the adoption of *Prometheus* and *Grafana*.
 - Shifted to an event streaming architecture backed by *Kafka*, enabling external teams to build abuse detection systems (via *Apache Spark*).
 - Improved change control process and reduced risk from change by adopting *Ansible* and *Terraform* for IaaS and Configuration Management.
- Made substantial improvements to our *Elasticsearch* cluster including:
 - Reduced RAM utilization by 80% and storage by 90%, resulting in corresponding cluster load reduction, and higher node availability.
 - Planned and executed migration from version 1.5 to 7.8 from on-prem to *AWS* with zero downtime.
- Identified and implemented changes that resulted in a 90% reduction in core *MySQL* database load:
 - Implemented read-write splitting for better horizontal scalability/availability of core databases.
 - Logically and/or physically isolated datasets to distinct *RDS* clusters, based on service domain.
- Researched and deployed *HAProxy* and *Keepalived*, enabling high availability and granular access control load-balancing for both internal and public facing services.
- Provided technical leadership and guidance in multiple capacities, including:
 - Provided design and code reviews, which were especially focused on improving system resiliency, reducing risk, *12 Factor App*, *SOLID* principles, and appropriate automated testing.
 - Fostered collaborative work and fluid communication between team members in different functional roles.
 - Managed (and participated in) on-call rotation; Was the final escalation point for high severity incidents.
 - Produced documentation and presentations on relevant technical topics.
- Drove changes that reduced alerting volume from 100's/week to ~2/week.
- Implemented numerous features and fixes for *Postmark*, including:
 - Email templating system featuring a custom template parser in *C#*.
 - Built a geo-distributed, highly-available, click tracking system.
 - Made parsing, performance, and encoding enhancements to core mail processing services.
 - Implemented many enhancements that improved performance, availability, and determinism of the public API.
 - Implemented first version of internal deliverability metrics dashboards for abuse detection/mitigation.
 - Authored and maintained official client libraries for the *Postmark* API for *C#*, *TypeScript/JavaScript*, and *PHP*.

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Experience (Continued):

Attrio Software | Principal
May 2013 to June 2014

I took a (planned) hiatus from full-time employment to work on some personal projects, but did some freelance software work for other companies. For one of my personal projects, I built a multi-player educational card game for iOS. This project included data collection and editorial work for over 1,000 historical events, graphic design work, and the actual game implementation. During this time, I also worked with several companies to improve their deployment processes as well as implementing consumer-facing features for their eCommerce and SaaS products.

NoveList/EBSCO Publishing | Software Architect
August 2009 to May 2013

At NoveList, I contributed to and/or led several projects that improved organizational agility, overall system reliability, and expanded our product suite. These included overhauling our core ETL processes, which were previously unreliable and took more than 40 hours to complete. I brought the runtime under 10 hours and systematically made improvements that more gracefully handled corrupt data. I proposed and implemented changes to one of their products to isolate data from presentation, enabling sale and adoption to a larger number of customers. I also worked with stakeholders to ideate an entirely new product, and then guided the technical implementation to bring that product to market.

InfoStrength, Inc. | Software Developer
January 2008 to July 2009

In this role, I contributed to bug fixes and improvements to their core product, a document management and workflow system geared towards the Health Sciences industry. During my tenure, I also had the opportunity to build consensus and gain buy-in for adopting processes and practices that improved reliability and system design, including introducing *SOLID* principles and design patterns. I was infrequently called upon to work directly with customers in resolving technical issues, as well as to provide some technical/sys admin support for the team.

DeJong, Inc. | Systems Developer
March 2002 to December 2007

At DeJong, I built several in-house software tools including extensions for *ESRI's ArcGIS* (for geographic analysis), time & expense tracking, content management, and work order ticket tracking. These tools improved efficiency for the company's core business, school district planning. I also was responsible for the company's IT infrastructure, including supporting *MS Exchange*, *SQL Server*, *IIS*, *Active Directory*, an *EMC SAN*, and *Cisco VPN/Firewall* configurations. Additionally, I documented our IT processes and policies for both technical and non-technical staff.

The Ohio State University | Student Systems Administrator/Campus Webmaster
September 2000 to August 2002

While attending college, I worked a student job in the Office of Information Technology. At the Mansfield Regional campus, I was the campus webmaster and was responsible for developing and updating the campus's website. I also developed a web-based work order system using *ASP* and *ODBC* for the regional campus IT staff's use. On the Main Campus, I maintained & updated the campus's many student computer labs, consisting of 30-60 seats of both Mac and PC machines. This included troubleshooting and replacing components and physical cabling.

Additional detail available upon request.

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Technical Skill Overview:

Languages: C#, TypeScript & Javascript (including *Node*), SQL, Bash & Powershell, Objective-C/Swift, Java, Ruby, PHP, HTML/CSS

Data Stores: Kafka, Elasticsearch, MySQL, RabbitMQ, SQL Server, MongoDB

Tooling: Docker, Grafana, Prometheus, Terraform, Ansible, HAProxy, Postfix, PowerMTA, Xen Hypervisor, Jenkins, Git

AWS: Lambda, ECS/ECR, EC2 (including VPC management), RDS (Aurora), DynamoDB, ALB/NLB, S3, SQS

Architectural Patterns: SOA, Event Streaming, Serverless, Microservices, MVC, Offline-First

Soft Skills:

- Thoughtful, effective, and empathetic communicator.
- Desire and ability to build consensus and vision across a team.
- Deep understanding of *SOLID*, *12 Factor App*, and “Cloud-native” development practices.
- Ability to thrive in learning the arcana of complex protocols/systems.
- Extensive experience navigating & maintaining code spread over multiple languages & platforms.
- Extensive experience and comfort with all major operating systems.

Education:

The Ohio State University | March 2005

Bachelor of Science, Geographic Information Systems

Service, Honors, Hobbies:

- On-going release of open source code and projects on [GitHub](#), including a (formerly) popular MongoDB open source library, [NoRM](#).
- Volunteering with *TinyWPA* to build community spaces and woodworking projects.
- Continued support and involvement in Habitat for Humanity.
- Attained Eagle Rank, Boy Scouts of America.
- Elected by peers as Senator in Undergraduate Student Government in college for two consecutive years.
- “Maker,” including woodworking, CNC/Laser/3D printing, and welding.