

DAVID M. OLAFSON

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Strong engineering leader with a proven track record of solving complex design challenges, developing innovative products, and attracting and managing talented teams. I have extensive experience deploying and operating large data infrastructure and highly available cloud services. My production code runs throughout the internet, on cellular networks, and in home security systems.

Expert at cloud services (AWS, GCP, private cloud); database architectures (SQL, key/value, columnar, document store); network protocols (TCP, HTTPS, RTSP, etc); and telemetry (dropwizard, grafana, splunk, dynatrace) for monitoring large distributed systems.

Joined multiple startups at early stages, 3 of which grew large and/or were acquired by large companies. Currently on sabbatical, investigating AI/ML algorithms layered on my existing expertise.

LifeShield Home Security, acquired by DirecTV, later acquired by ADT Director of Software Engineering 2007 – 2024

LifeShield was one of the first home security systems connected to the internet, accessed via the web and mobile apps. It included support for cameras, home automation, event notifications for the end user, and IP connections to a 24/7 monitoring center. LifeShield was acquired by and integrated into DirecTV's service offerings. It was later acquired by and integrated into ADT's product line, as the core platform for all future residential business.

I led the software team from a small startup to a team of 6 managers, 4 agile/scrum leaders, and over 90 software engineers (Java, Web, Android, and iOS). My team designed, developed, and administered their first billing and e-commerce systems, mobile apps, and cloud services. We developed a custom camera service, including live streaming video and AI-based facial detection. Most importantly, we developed a service to quickly and securely relay Fire and Burglary alarms to 911 call centers. Nearly all end-user and customer-service facing features & functionality ran on the cloud services that my team developed.

My team ensured that our cloud service was highly performant, highly available, and cost effective - while supporting millions of devices. As we grew, we made multiple improvements to our database architecture and DevOps processes (Ansible, Terraform, Kubernetes, etc). Under my leadership, the team performed 5 data center migrations, including private cloud, AWS, and GCP. We instrumented our code to collect telemetry data, for use in troubleshooting, performance, and trend analysis. We did all this while supporting new feature requests from our partners in marketing, sales, and customer support.

The integration of LifeShield into ADT meant a more than 100x increase in customers and devices on our platform. To support this scale we designed a new, patent-pending cloud service model.

Over time, as the team and systems grew, I regularly made organizational improvements to increase team productivity. We implemented agile/scrum processes, and restructured team topology. We enforced peer code reviews and unit tests with a focus on reducing problems found by QA. We automated our API documentation, and developed sequence diagrams to highlight system architecture, API call flow, and mobile app layout in one cohesive format. Under my direction, the team adopted a new software branching and deployment process - accelerating releases from once every 3 months to once every 2 weeks.

***TruePosition, acquired by Liberty Media
Manager, Location Processing Software
2001 – 2007***

TruePosition is a multibillion-dollar E911 wireless location system deployed on over 10,000 AT&T and T-Mobile cell sites for over 20 years, long before the advent of GPS enabled smartphones. The system relies on precise timing measurements of cellular signals arriving at various cell sites; complex patented algorithms; and delivery of a caller's location data to the appropriate 911 agency - all in real time. As both cellular and 911 infrastructure, the system is highly available, fault tolerant, and reliable.

I led a team of 12 C++ developers that designed and deployed the Location Processing infrastructure. This receives signals from radios at the cell sites, isolates individual cell phones from the hundreds of simultaneous calls occurring at a site, and implements the location algorithms developed by staff scientists and mathematicians. Components of this architecture were developed and installed on Solaris, Linux, and VxWorks.

I also led the outsourced development of a NMS/EMS system (in Java) to manage the thousands of devices we had attached to cell towers. This system included fault detection, configuration, and performance monitoring. We performed on-site system integration, training, and troubleshooting of this system for each of our customers.

***Various Startups
Software Engineer
1995 – 2001***

Prior to TruePosition, I worked at several startup companies in the Seattle area, including:

At **Bridgeway**, I developed software to manage Frame Relay and ATM networks. This included a C++ application that stored data in a hierarchical SNMP MIB format. I also developed a Java application to display the topology and status of a VPN. I performed on-site installation, training, and support for this product at Pacific Bell (CA), ATT (NY), and NTT (Japan).

At **F5**, I was the first employee and lead developer. I designed and developed the 1.0 version of **BIG/ip**, a pioneering device for web server load balancing, which became F5's launch product. This involved modifying a BSD Unix kernel, bypassing the TCP/IP stack, and altering TCP/IP packet headers.

Prior to F5, I held several co-op and research assistant positions through the University of Connecticut. I also developed code for OPAL, an algorithm that used Lagrange multipliers to optimize factory scheduling. Pratt & Whitney used this product to manufacture thousands of aircraft engine parts on hundreds of machines - with minimal cost.

EDUCATION

University of Connecticut
B.S. in Computer Science and Engineering

PUBLICATIONS

[US Patent # 6148337:
Method and system for monitoring and manipulating the flow of private information
on public networks](#)