

# Darren Kopp

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## Summary

Skilled software engineer with a passion for performance. Proven track record of over-achieving and requiring minimal management. I bring a fun and engaging attitude and always assist those around me with whatever they need.

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## Experience

### Principal Engineer

Stealth Startup • Bethesda, MD

11/2022 - Present

Lead the development of a cloud-centric streaming engine focussed on efficiently reading/writing event data directly to S3.

Architected a dynamic type system, serving as a foundational component of our stream processing framework, enabling strongly typed data transfer to multiple databases, ensuring compatibility with leading serialization frameworks.

Engineered a universal system to track and register changes across various database systems, enhancing existing frameworks by reducing the time and storage required for initial data transfers.

Engineered a scalable materialized view engine capable of processing multiple stream inputs and only emitting the delta outputs for the query. This included a comprehensive process of lexing/parsing SQL queries, constructing a logical execution plan (including common optimizations), and finally constructing a physical execution plan that computes and stores the relevant information to satisfy the query.

Devised an innovative framework to integrate Generative AI into existing stream processing pipelines and designed a user-friendly system that allows the construction of an optimized query processor from existing data. This processor is designed to enhance chat functionality with contextual data by receiving inputs from an LLM (Language Learning Model) that supports function calling.

### Principal Engineer

Homesnap • Bethesda, MD

07/2018 - 07/2022

Spearheaded the development of news feed and recommendation microservices, driving user engagement through personalized real estate listing update notifications.

Designed and developed a comprehensive tool suite for real estate agents, streamlining property showings and client management.

Led multiple initiatives to enhance the performance, reliability, and scalability of critical data center components, while migrating to AWS-hosted microservices.

Engineered an extensible system for importing listing data from brokerage partners, expanding nationwide coverage to 93%.

Mentored and assisted colleagues through code reviews, lunch and learn sessions, and ad-hoc guidance, fostering a culture of knowledge sharing and technical growth.

### CTO

DevResults • Washington, DC

01/2014 - 07/2018

Led the development of an enterprise analysis sharing system, enabling clients to efficiently disseminate detailed program information to managers and donors.

Directed the creation of a virtual database system, empowering non-technical staff to conduct advanced analysis of survey data securely and remotely.

Implemented architectural enhancements, including caching, performance monitoring, and asynchronous task processing, optimizing system scalability and performance.

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### **Skills**

Amazon Web Services, Leadership, .NET, Architecture, Database Development, Redis, Stream Processing

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### **Education**

#### **Computer Science**

Weber State University • Ogden, UT