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Andrew Repp

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Employment

Senior Systems Engineer at Cloudflare
December 2023 - Present

- Re-architected Hyperdrive's core query processing and caching logic to facilitate local-first caching, reducing cache hit latency by 95%. (Rust)
- Developed placement subsystem that optimally located Cloudflare resources near customer origin databases, reducing query latency by up to 80%. (Go, Rust)
- Designed and implemented support for Postgres prepared statements in distributed connection pooler, unblocking key driver in the JavaScript ecosystem. [See article.](#) (Rust)
- Developed integration with Cloudflare Tunnels to enable full product compatibility with private networks. Developed custom websocket implementation to facilitate this. [See article.](#) (Rust)

Software Engineer at VMware
June 2022 - November 2023

- Developed key features within backup and restore utilities for Greenplum database. Notably includes parallel metadata restore, improving schema restore of by up to 2,000% in customer systems. [See article.](#) (Go)
- Architected and implemented from-scratch rewrite of backup manager utilities, reducing runtime latency by approximately 8,000% on very large customer deployments. (Go, sqlite)
- Designed and developed new SQL command (ALTER TABLE REPACK) to improve compression and scan performance on very large customer datasets. Observed 50% reduction in disk space usage in tests of large installs. (C)
- Implemented several key features in core Greenplum server codebase, to help drive to release of GPDB7. Examples include autovacuum implementation and parallelized system monitoring views. [See video tutorial.](#) (C)
- [Dedicated GitHub profile for my open source contributions at VMware](#)

Software Engineer at Network Perception
April 2021 - June 2022

- Profiled and improved performance of core backend, inference, and parser code. Resulted in approximately 10,000% improvement in runtime performance. (Python, Redis)
- Designed and implemented a full rebuild of the product's integrated analytics engine. (Python, JavaScript)
- Developed parser and inference integration for various networking software output formats, including Cisco ASA, Fortilink Fortiguard, Google Cloud Platform, AWS Networking, Nessus, nmap, and libpcap. (Python)

Senior Data Scientist & Team Lead at OptionCare Health
July 2019 - April 2021

- Developed software package for analysis of patient medication adherence. Authored internal whitepaper showing company excellence relative to industry standards, submitted to conference. (Python, SQL)
- Developed schema and ETL queries for analytic data mart, leveraging existing primary data sources into an enriched platform for rapid analysis. (SQL)

Senior Analyst & Engineering Manager at OptumRx
January 2017 - June 2019

- Developed statistical programs deployed to visualization layer hosted on department website. Owned every step of multiple projects using this workflow, from requirements to deployment. (SAS, Tableau, Azure)
- Scoped, architected, developed, and deployed a new algorithmic approach to optimally categorize products by price to minimize cost to the company and maximize patient satisfaction. This was successfully productized by the company. (SAS, SQL).
- Refactored company reporting suite into a parallel architecture, reducing runtime by 400%. (SAS)

Notable Technical Projects

- OSS Medication Adherence Package (2020). Developed and published package for calculating medication adherence. Used pandas, NumPy, and multiprocessing. Contracted as a consultant on its use and validation for multiple private healthcare entities. Ported to rust with clap and rayon. Discussed [here](#). (Python, Rust)
- Formulary Optimization System (2019). Developed and deployed a program to analyze medication usage across 65 million patients using customized algorithm and grid search. Productized by employer. (SAS, SQL)

Education

Georgia Institute of Technology	Master of Science - Computer Science
University of Wisconsin (Stevens Point)	Master of Science - Fisheries Science
University of Illinois (Champaign-Urbana)	Bachelor of Science - Natural Resources