TRISTAN PARTIN

Software Engineer (Postgres Hacker) @ Neon

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EXPERIENCE

Software Engineer (Postgres Hacker)
Neon

📅 May 2023 – Present   📍 Austin, Texas (remote)

- Participating in upstream Postgres development.
- Migrating Postgres from a multi-process model to a multi-threaded model.
- Scaffolding out the final pieces of the Postgres Meson build.
- Adding support to Neon for new Postgres releases.

Staff Software Engineer
Micron Technology

📅 August 2020 – February 2023   📍 Austin, Texas (hybrid)

- Maintained the Heterogeneous-Memory Storage Engine (HSE)
- Integrated HSE with MongoDB v3.4 as an alternative to WiredTiger
- Benchmarked HSE against popular storage engines like RocksDB and WiredTiger and found improvements in various workloads
- Designed Python and Java language bindings to wrap the HSE C API
- Co-authored a patent filing for a new on-media data structure

Software Developer
Expero

📅 July 2019 – August 2020   📍 West Lake Hills, Texas

- Abstracted a collection of Java/TypeScript/Node.js microservices to be able to use both DataStax Enterprise and open source equivalents like JanusGraph, Cassandra, and Elasticsearch
- Developed a graph database benchmarking suite using CosmosDB, TigerGraph, DataStax Enterprise, and Neo4j
- Migrated data from a legacy FileMaker system to AWS RDS

Software Development Intern
Expero

📅 September 2017 – May 2019   📍 College Station, Texas

- Designed a graph database modeling course curriculum
- Developed a daily time reporting tool for company leads to track developer time charges using AWS Lambda and Go
- Created a microservice using AWS S3 and Java that performs dynamic PDF generation
- Built a proof of concept ASP.NET Core application using Microsoft's CosmosDB Gremlin API

Software Engineering Intern
NI (National Instruments)

📅 May 2018 – August 2018   📍 Austin, Texas

- Worked as a driver developer on the XNET team, which develops solutions for automotive testing

EDUCATION

Bachelor of Science
Computer Engineering
Texas A&M University

🎓 May 2019   📍 College Station, Texas

SKILLS

C | C++ | Go | Python | Java | Linux | Git

Build Systems | Databases | Storage Engines

Systems Software | Open Source

PROJECTS

Heterogeneous-Memory Storage Engine
⌗ **hse-project/hse**

- A fast embeddable key-value store designed for SSDs and persistent memory, optimizing performance and endurance by orchestrating data placement across DRAM and multiple classes of solid-state storage
- Overcomes HDD-based architectures to improve throughput up to 6 times, latency up to 11 times and SSD endurance by 7 times when compared to Meta's RocksDB

HSE Python Bindings
⌗ **hse-project/hse-python**

- Python language bindings for the HSE C API

HSE Java Bindings
⌗ **hse-project/hse-java**

- Java language bindings for the HSE C API

Various Open-Source Contributions
- Includes organizations and technologies like Meson, GNOME, Electron, Terraform, etc.

AWARDS/CERTS

Apache Cassandra 3.x Developer Associate
🏆 **DataStax**   📅 2020

Eagle Scout Award
🏆 **Boy Scouts of America**   📅 2014

- Implemented time synchronization between data acquisition modules in order to better correlate collected data using C++ in both the Windows kernel and userspace drivers