

# TRISTAN PARTIN

## Staff Software Engineer @ Micron Technology

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## EXPERIENCE

### Staff Software Engineer

#### Micron Technology

August 2020 – February 2023

Austin, Texas

- 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

### Software Developer

#### Expero

July 2019 – August 2020

Austin, 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 Gatling, 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

#### National Instruments

May 2018 – August 2018

Austin, Texas

- Worked as a driver developer on the XNET team, which develops solutions for automotive testing
- Implemented time synchronization between data acquisition modules in order to better correlate collected data using C++ in both the Windows kernel and userspace drivers

### Software Engineering Intern

#### Booz Allen Hamilton

May 2017 – August 2017

Houston, Texas

- Worked under the NASA Mission and Program Integration contract
- Translated a SharePoint table of all payloads/systems, hardware configurations, protrusions and overlaps aboard the International Space Station to MariaDB and SQL
- Developed a desktop application in Python for managing the aforementioned information

## EDUCATION

### Bachelor of Science

#### Computer Engineering

#### Texas A&M University, College Station

May 2019

## SKILLS

C C++ Go Python Java  
Linux Git Buildsystems  
Databases Docker Terraform

## PROJECTS

### Heterogeneous-Memory Storage Engine

#### GitHub://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 six times, latency up to 11 times and SSD endurance by seven times when compared to Facebook's RocksDB

### HSE Python Bindings

#### GitHub://hse-project/hse-python

- Python language bindings for the HSE C API

### HSE Java Bindings

#### GitHub://hse-project/hse-java

- Java language bindings for the HSE C API

### Various Open-Source Contributions

- Include 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