

JoshuaReed

Contact

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Sites

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Technologies & Frameworks

Strongest → Weakest

Pandas & Daru

ORMs

GraphQL & Graphene

Rest

Rails & FastAPI

Languages

Strongest → Weakest

Python

SQL

Ruby

Shell

noSQL

LaTeX

C/C++

Go

JavaScript

TCL

Software Skills

Strongest → Weakest

Vim/VSCode

Linux

Version Control

TDD & Coverage

Command Line Utilities

Object Oriented

Programming

Experience

Software Engineer — Tapeout Technology Development

Intel

2017—Present

- Helped build a FastAPI data API used to abstract old and new automation systems. Integrated an async Oracle driver and PyODBC connector. Added an async ORM for which I built the Oracle backend (see project below). Implemented the GraphQL endpoint. Utilized the combination of GraphQL and the ORM to automate the optimization of SQL queries. Built several complicated queries for Rest endpoints. Participated in infrastructure and CI/CD decision making. (**Python, FastAPI, Pandas, SQL, GraphQL, Tortoise ORM, Swagger, UnixODBC, PostgreSQL**)
- Refactored a Rails ~10k SLOC website to ~7k SLOC primarily through DRYing up the code and utilizing DataFrames. Used above mentioned DataAPI to integrate with replacement automation system. The refactor also included a great deal more logic for new states introduced to the models, bumped Rails 4→6, moved from Sprockets to Webpack, included the addition of a local MongoDB startup and test script, and added 10s of regression tests where none existed before. (**Ruby, Rails, Mongoid, Mongo, Shell, Javascrit, JQuery**)
- Supported and improved the use model of Electronics Design Automation tools. Included manipulating UI code to add features and automation previously thought to be only possible if added as a feature from the external vendor. (**Python, SQL, Pandas, Mongo, TCL&TK, CalibreMDPV**)
- Built numerous reports and command line and GUI driven automation tools. Integrated divers data sources and overcame several barriers to automation including connecting to Sharepoint via Kerberos auth. (**Ruby, Python, SQL, noSQL, Kerberos, Shell**)
- Part of the transition team to update our software infrastructure accross over 100k hosts. For this I rewrote a batch processing linux adapter, updated many of our aging repositories, and installed several updated libraries from source.
- Participated in on-call rotation for ops and compute triage.

Internship Technical Marketing Engineer

Mentor Graphics

Summer & Fall, 2016

- Created a regression test generation program which converts arbitrary graphs in node neighbor format to usable input for Mentor's Calibre tools. (**Python, Pandas, Shell, TCL**)

Internship Design Engineer

Garmin AT

Spring & Summer, 2015

- Redesigned an aerial receiver's signal demodulation logic achieving a 60% reduction in FPGA resource utilization. (**VHDL**)
- Built tool that decodes USB voltage readings using a finite state machine algorithm. (**Python**)
- Built tool that generates VHDL project compilation order from source files. (**Python**)

Project

Tortois ORM — Oracle Backend

- Tortoise ORM is an asynchronous Object Relationship mapper.
- To design a GraphQL endpoint compatible with async FastAPI that would optimize queries automatically I needed an async ORM. Unfortunately, I also needed both PostgreSQL and Oracle support. Since the Oracle backend for Tortoise was the only missing link, I built it. My fork has since been merged into develop.

Education

B.Sc., Electrical and Computer Engineering

Oregon State University

2017