Jason Shiverick

Lead Data Scientist and Data Engineer

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Tech Stack

- Code : Python, Spark, SQL / NoSQL, Scala, Go
- DevOps : Git, Docker, Ansible, Airflow, NGINX, Terraform
- AWS : EC2, S3, EMR, Glue, Athena, RDS, Lambda, Kinesis
- Hadoop : HDFS, Hive, Impala, Presto
- Stats and ML : pandas, scipy.stats, numpy, sklearn, lifelines, pymc3, MLlib

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Experience

Udemy *Senior Software Engineer, Data Platform* **June 2019 to Present**

- Developed pipeline to process mysql binlogs through kafka into a scala spark streaming application that provides distributed updates and deletes in the apache hudi format on AWS s3.
- Used ansible and terraform to build and maintain production data infrastructure in AWS including multiple AWS EMR clusters that ran up to 880 cores and 7 TB of memory.
- Rotated in on-call schedule to ensure that infrastructure was reliable and ~1K jobs passed on a daily basis.

Waymo *Senior Data Scientist* **June 2018 to June 2019**

- Designed and developed the python run feature extractor pipeline. Built on apache beam, flume, borg, python and protobuff, the framework provides users a simple design pattern to extract features *[counts, histograms, rainflow matrix]*, from vehicle and sds log data, then it easily scales over the whole fleet processing 100's of TB in minutes.
- Developed Metropolis Hastings algorithm in Go for sampling from a Weibull posterior with arbitrary priors.
- Developed Monte Carlo simulation in python for accurately forecasting field failures in complex systems.
- Developed Reliability analytics data pipeline and dashboards for report automation.

Mayfield Robotics *Data Engineer, Consultant* **March 2018 to June 2018**

- Data Warehouse: Designed and implemented analytics data infrastructure using spark via AWS Glue to process robot logs and disparate data sources into AWS Athena optimized parquet files on S3.

Tesla *Senior Data Scientist, Manager* **2013 to 2018**

- Developed a modern approach to advanced warranty simulation in Python that can account for competing failure modes in a repairable system under varying use conditions.
- Developed statistical framework for python: *Weibull analysis, Statistical era finding, Stress-Strength Convolution, Hypothesis testing, Best fit solver, ranking methods, mttf*
- Provided direction on proactive maintenance campaigns and developed prognostics algorithms: *physics of failure, logistic regression.*
- Built and Maintained robust back end infrastructure on top of Docker and Ansible. My design made it easy to provision and manage a Spark cluster and various micro-services between two people while also providing statistical models and TB scale log analytics.
- Established an analytics workflow leveraging git version control, with jira integrations. Designed the ETL workflow using spark, airflow, jupyter and superset.
- Established an extensive code base that provides tools to the organization for extracting, transforming, and analyzing field data at scale.

Ingersoll Rand *Reliability Engineer* **2011 to 2013**

Medtronic INC. *Product Performance Specialist* **2010 to 2011**

Boeing Corporation *Systems Engineer* **2008 to 2009**

Education

Graduate Course Work (Reliability Engineering) 2012 to 2013 University of Maryland (online) College Park, Maryland *ENRE 602: Reliability Analysis ENRE 655: Advanced Methods in Reliability Modeling*

Bachelors of Science in Aerospace Engineering 2004 to 2008 Iowa State University Ames, Iowa

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Projects

Cronicle is a git integrated workflow scheduler that provides a pull model for CI/CD and versioning on job execution.

Invited Talks

PHM Society 2015 automotive panel discussion

ARS 2014 Big Data in Reliability: 1st Place