

TECHNICAL EXPERTISE

Languages	Python, Scala, Java, JavaScript, R, Go, C#, SQL, PHP, C++, C
Database	Hive, PostgreSQL, MongoDB, Oracle, SQL Server, MySQL, NoSQL
Tools	Kubernetes, Docker, Cloud Foundry, AWS, Map Reduce, Coherence, React/Redux, Android, Hibernate, Geospatial, Hadoop, React, NodeJS,
Other	OOD/OOP, AOP, TCP, JDBC, ARM embedded development, Threading, Geospatial

PROFESSIONAL EXPERIENCE**The Climate Corporation - St. Louis, MO****December 2018 – Present****Senior Staff Engineer**

- Upgrade and support production and research utilized distributed computing platforms
- Design/Implement multiple streaming process to calculate activity boundaries at 0.5 meter resolution over global data-set.
- Design and Optimize multiple Spark processes performing model predictions and data ELT into HIVE and other data stores

Environment: Scala, Python, Hadoop, AWS, Docker, ECS, Kubernetes, Domino Data Lab

Bayer Crop Science/Monsanto - St. Louis, MO**July 2016 – December 2018****Consultant (via Technology Partners)****Software designer and developer**

- Design/Implement large throughput UAV analytics pipeline on Kubernetes. This pipeline processes UAV images from drone to metrics; automatically processing results from multiple drone teams to calculate millions of small area metrics.
- Design/Implement inversion risk weather prediction process. This process continuously gathers the latest inputs, generates predictions and serves 0-30 hour predictions for the entire US and parts of Mexico/Canada at a 3 km resolution.
- Port large geospatial prediction model from proprietary geospatial toolkit to full open source toolkit to allow model to run at scale. Achieve > 100x throughput improvement allowing predictions to cover US cultivated land
- Build and deploy multiple APIs (Scala/Play2) used to predict and analyze crop performance and experiment design
- Build soil interpolation workflow to process raw soil samples from initial QC to published data reference layers

Environment: Geospatial, Python, R, Go, AWS, Kubernetes, Docker, Scala

CenturyLink Cloud - St. Louis, MO**April 2016 – July 2016****Senior Lead Software Engineer/Contractor (via Relay Technology)**

- Lead team in restarting failed effort to implement web application on a very aggressive time frame. Released beta in less than 2 months from project reboot.
- Designed and implemented multilayered caching scheme to achieve reasonable performance from under performing legacy back end services.
- Helped team select more modern web toolkits that allowed them to be more productive with minimal retaining overhead.

Environment: Java, SpringBoot, NodeJS, React, Redux, GoCD, Agile, TDD

Monsanto - St. Louis, MO

August 2013 – April 2016

Consultant/Developer (via Technology Partners and Direct)

Software designer and developer

- Design and implement an analytic model engine. Engine allows models written in various languages (R, Python, JVM) to be independently created, updated, and run as a service while providing easy access to multiple data sources (Hadoop based, NoSQL, Relational) as both input and output.
- Port large geospatial analytic model to AWS. This includes moving and implementing multiple data services to AWS that supply US wide high resolution raster and vector data sets.
- Create services to store, retrieve and visualize user defined and existing USDA/USDA geospatial data sets. Create Map Reduce jobs to ingest and process and store data sets for quick retrieval via HBase.
- Maintain and implement improvements to internal client server applications written in Java and Scala
- Design and Implement multiple new single page web applications
- Design and implement RESTful web services
- Resolve complex timing issues involved with utilizing Hibernate and Coherence with write behind caches in a multi threaded, distributed application
- Interview potential new hires and and mentor junior developers

Environment: Scala, Play, AWS, Java, NodeJS, Python, R, JSON, AWS, Cloud Foundry, Agile, TDD

QFlow Systems - St. Louis, MO

December 2004 – August 2013

Senior Developer

Designer and developer for web based document management and work flow applications.

- Designed and implemented multi tier document management/workflow system with HTML/AJAX and JSON-RPC clients.
- Designed and implemented work flow engine supporting static and dynamic work flows.
- Create conversion tools that converts multiple legacy formats to PDFs.
- Received GIAC Secure Software Programmer-Java (GSSP-JAVA) certification.
- Perform security audits and implemented fixes on multiple web based applications.
- Audit and update applications for 508 Rehabilitation Act compliance.
- Implemented application wide Lucene based full text search.
- Complete development of prototype Silverlight based map drawing tool.

Environment: Java, JSON, OOD/OOP, J2EE, Eclipse, GWT, C#, JSP

EDUCATION

BS degrees in Electrical and Computer Engineering
Minor in Mathematics
University of Missouri, Columbia, 1992-1997

CERTIFICATIONS

Sun Certified Java Developer
January 2002
Sun Certified Java Programmer
February 2001

OPEN SOURCE

<https://github.com/mohaine>