Joseph D. Batchik

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Summary

Software engineer with a particular interest in large-scale infrastructure and distributed systems, working on development through to production.

Work Experience

Apple Inc. (iCloud) - San Francisco, CA — 2016 - Present
Software Engineer — `http://apple.com/`

- Designed key aspects of the backing storage engine that enables iCloud to scale to hundreds of millions of users each month.
- Architected the new multi-tenant online compaction system which provides higher throughput guarantees and reliability by distributing workloads over backend resources evenly.
- Engineered a proactive solution to data loss prevention. Led to the discovery of several undiscovered, subtle bugs in the underlying frameworks and data store.
- Vastly reduced database load by introducing a job framework that allows numerous scheduled jobs share the same pooled resources concurrently.
- Languages / tools used: Scala, Java, Cassandra, MapReduce Frameworks.

Cloudera - San Francisco, CA — Summer 2015
Software Engineer Intern — `http://cloudera.com/`

- Implemented network performance increases in Apache Spark that reduced traffic by over 90%.
- Integrated Apache Avro as a first-class citizen into Spark core for use in RDDs.
- Languages / tools used: Scala, Java, Apache Spark.

Google - New York, NY — Summer 2014
SRE Engineering Practicum Intern — `http://google.com/`

- Implemented load testing infrastructure for newly released software, allowing for early detection of bugs and performance defects.
- Reduced request latency for back-end monitoring services by 70%.
- Languages / tools used: Java, Python Protocol Buffers, Google data stores.

Amazon - Seattle, WA — Spring 2014
Software Developer Engineer Intern — `http://amazon.com/`

- Overhauled internal search capabilities for the Enterprise Data Warehouse team, allowing for near real-time searching for financial datasets and results.
- Designed the new search system to be fault tolerant to preserve data integrity.
- Languages / tools used: Java, various AWS products, including Cloud-Search and SNS.

Education

Rochester Institute of Technology - Rochester, NY — 2012 - 2016
Bachelors of Science in Computer Science — In-Major: 3.82 GPA, Overall: 3.60
Graduated *Cum Laude*

Skills & Certifications

Proficient at Scala, Java, Python
Familiar with C, Go, Rust
Tools Git, Spark, Avro, Gradle, PostgreSQL, Cassandra, Protocol Buffers, Thrift, OpenJDK JMH
Apache Spark Contributor Developed a solution to allow for Spark to efficiently read / write Apache Avro data formats. Worked on features in the Spark SQL engine.

Self-Directed Projects Include

Raft Key-Value Store — `https://github.com/JDrit/RaftService`

- Distributed key-value store that provides linearizability guarentees for all type of operations.
- Out of the box support for leader election, transparent handling of failing nodes, and correctness under network partition.

CRDT Distributed Tally Service — `https://github.com/JDrit/gossip-crdt`

- Distributed backend counting service that is capable of withstanding large amounts of concurrent requests.
- Uses G-Counters as the backing asynchronous replication model.
- Utilizes a combination of lightweight threads for the request handling, Zookeeper for cluster state, and Thrift as the shared communication protocol.