

XIANGFENG(ALLEN) ZHU

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🎓 EDUCATION

University of Michigan, Ann Arbor
Bachelor of Science, Computer Science

Expected: Dec 2020

👥 EXPERIENCES

Software Systems Lab University of Michigan

Nov. 2018 - Now

Research Assistant Advisor: Prof. Mosharaf Chowdhury

- Developing a data management framework for Federated Learning
- Co-developed a general-purpose execution engine, Sol, that can adapt to diverse network conditions on top of Apache Spark.
- Improved SQL, machine learning, and streaming jobs by 4.2× and 16.4× on average, respectively, in offline and online settings compared to Apache Spark in resource-constrained networks.

Disorderly Lab UC Santa Cruz

Mar. 2018 - Now

Research Assistant Advisor: Prof. Peter Alvaro

- Designing a tracer and a fault injector using system-level provenance for unmodified distributed systems
- Developed a debugging approach for distributed systems based on analysis of provenance data obtained during system executions
- Evaluated our approach on the TaxDC collection of real-world bugs from four large-scale distributed systems (Cassandra, Hadoop, HBase and ZooKeeper).

Dropbox San Francisco, CA

May 2019 - Aug. 2019

Software Engineer Intern Filesystem Team

- Worked on the next-generation distributed filesystem for Dropbox
- Designed and implemented an asynchronous system to unmount namespaces that a user loses access to
- Rearchitected our MapReduce framework to be more efficient and fault-tolerant using RocksDB and gRPC

📄 PUBLICATION

- Fan Lai, Jie You, **Xiangfeng Zhu**, Harsha V. Madhyastha, Mosharaf Chowdhury, "Sol: Fast Distributed Computation Over Slow Networks", *Proceedings of the 17th USENIX Symposium on Networked Systems Design and Implementation (NSDI 20)*, Santa Clara, CA, 2020

♡ PROJECTS

Distributed Debugger Using Provenance Graph (Go)

Mar. 2018 - Aug. 2018

- Implemented a lineage-driven distributed debugger that can analyze the given program and give suggestions to the programmer how and where to correct the program

Fault-tolerant Scalable Key-Value Store (Python)

Jan. 2018 - Mar. 2018

- Built a distributed, fault-tolerant, highly available and eventually consistent key-value store that can store the amount of data that cannot fit into one single machine.

⚙️ SKILLS

- Language: Java, C, C++, Python, Go, Scala, Bash, SQL, HiveQL, HTML, CSS, JavaScript, \LaTeX
- Tool: Perf, Valgrind, Git, Vim, GDB, Docker, Xcode, Flask, Pytorch
- Data: Oracle, MySQL, Neo4j, Hadoop, Hive, Spark, Flink, Zookeeper