

# Michael Browning

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## Summary of Qualifications

- Michael Browning is an effective craftsman, with a particular concern for the ergonomics and maintainability of software systems. Michael's specialties include the design and implementation of distributed systems and mathematical models and the adaptation of software processes to highly parallel environments.
- Michael has specific experience with writing software for large computer clusters and multi-core systems, implementing and using machine learning constructs and algorithms, systems programming in UNIX-like environments, and programming for the web.
- Language proficiency in Python, C++, JavaScript, Java, Clojure.

## Professional Experience

### **Software Engineer – Mesosphere, Inc.**

*Mesosphere offers DC/OS, a cluster-wide compute-resource- and distributed-service manager.*

#### Data Services, SDK Core Team

*June 2016 – April 2018*

- Implemented numerous high-priority features in the DC/OS SDK, a library for implementing stateful Mesos schedulers, including: region awareness, IP/container support, and nested containers.
- Designed a set of metrics and automated checks for code quality based on such measures as: the size of dependency cycles on a per-package basis, cyclomatic complexity, and method size.
- Developed an extensive suite of system tests and reusable abstractions for testing the various DC/OS SDK-based services offered by Mesosphere.

### **Software Engineer – Uber Technologies, Inc.**

*Uber provides a logistics platform to match drivers to users requesting a ride.*

#### Core Infrastructure, Compute Platform

*January 2016 – Present*

- Contributed to the Apache Mesos open-source project.
- Designed and implemented build pipeline for continuous integration of Mesos nightlies.

- Developed operational guidelines and implemented POC for true multitenancy between long-running services and batch-oriented jobs (Hadoop and Spark) on the Mesos platform.

### Core Services

*June 2014 – January 2016*

- Implemented, as tech lead, a service for maintaining employee authorization data.
- Designed a distributed, gossip-based system for performing employee and service authorization checks in transport layer.
- Designed and implemented backend for an internal authorization management UI tool allowing employees to request or grant access to various user roles.

### **Scientific Programmer – Washington University in St. Louis, Swamidass Lab**

*The Swamidass lab designs novel algorithms to discover new medicines and new uses for existing medicines.*

### Laboratory and Genomic Medicine

*August 2010 – May 2014*

- Designed and implemented software tools for pharmacological analysis in highly parallel environments in Python.
- Implemented experiments for and co-authored papers on novel machine learning methods in a pharmacological context.
- Collaborated with researchers in industry and in other labs to validate analyses and generate new leads for drug testing.

## Additional Experience

### **iOS Development – Helper Helper**

*Helper Helper is an iPhone app that will allow volunteers to find volunteer opportunities, track their hours and commitments, and compete against friends.*

- Co-designed and -implemented the application, including presentation, logic and data tiers
- Designed, implemented and deployed a REST API for the storage and access of user volunteer data

## Education

### **B.A. in Music, Minor in Computer Science, graduated 2009**

Washington University in St. Louis, St. Louis, MO

*Publications and references available upon request.*

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