Douglas Rapp

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Objective

I like solving hard problems and building big scalable systems.

Experience

Layer (2014-2018)
Senior Software Engineer, Platform Lead (San Francisco, CA)

- Built a world-class messaging system for mobile and web from the ground up
  - Worked full stack from Android devices, to Erlang and Scala services, to CoreOS and Kubernetes.
- Led a team of five to develop and maintain the Layer messaging backend service.
  - Wrote product and engineering specs for new features.
  - Worked with newer engineers to get features implemented.
  - Coordinated with the client and infrastructure teams.
- Designed and implemented the Layer REST APIs
  - Built Scala server backed by nginx and rabbitmq that can serve partitioned users.
  - Used postgres as a cache and materialized view to get data ready for REST access.
  - Adapated a mobile sync protocol to reconcile data from Cassandra.
- Implemented the Layer authentication protocol on the server in Erlang
  - Built a rest endpoint in that handles CSR requests to generate client certificates
  - Implemented a JWT-based scheme for doing federated user auth
- Built a push server to notify about messages over APNs and GCS
  - Worked in Erlang to maintain persistent connections and route user messages
- Built a badging system to add unread count to push notifications for mobile devices.
- Built a "Rich Content" system for mobile clients to attach large files to messages
  - Added APIs to generate authorized upload and download urls for Google Cloud Storage
  - Implemented async resumable upload and download on Android
- Laid out the foundations for using Erlang and Cassandra in the core messaging server
- Foundational work on the Android SDK transport and persistence layers.
- Built out a jenkins/nexus infrastructure for build and dependency management.

StackMob (2012-2014)
Software Engineer (San Francisco, CA)

- Worked on a massively scalable Mobile Backend as a Service providing datastore APIs, push notifications, and custom code solutions for mobile apps
- Rewrote the push server for scalability and performance using Riak, and added GCM support.
- Evolved and owned the Java/Android SDKs, adding an ORM and upsert API
- Implemented rich OAuth2 permission options for the datastore and dynamic per-app CORS

Adobe AIR Team (2008-2011) and Flash Runtime Mobile Team (2011-2012)
Software Engineer (San Francisco, CA)

- Implemented features and fixed over 1,000 bugs in areas including rendering, video, and OS interaction
- Developed across Android, iOS, Windows, and Mac on a huge, multi-language, legacy codebase

Technical Skills

Core Languages: Scala, Erlang, Java

Familiar Languages: C, C++, Python, LaTeX,

Technologies: Cassandra, Postgresql, Kubernetes, RabbitMQ, Akka

Education

Brown University, B.S. in Mathematics/Computer Science (2004-2008)
Coursework in Algorithms, Computer Graphics, and Machine Learning