

**Jacob Greenleaf**  
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**Experience**

**Senior Software Engineer**, Uber Technologies, Inc. 2017 – Present

**Software Engineer II**, Uber Technologies, Inc. 2016 – 2017

- Scaled a distributed multi-datacenter cron / celerybeat-like service from 20,000 jobs to 5,000,000 concurrently running jobs (100x). Analyzed the root cause of a storage bottleneck and redesigned a bad read/write pattern in a table that caused an incident, which involved deep dive into the storage model of Cassandra (LSM). Benchmarked alternative configurations and read/write patterns using cassandra-stress. Changed table schema and deployment to add multi-tenancy.
- Maintained a high availability (99.999% uptime) capacity and availability cache built on top of Redis and Cassandra. Wrote tooling to do random sampling to analyze object size histograms.
- Developed a software framework for writing backend services using an embedded DSL and static analysis that is used in over 25% of mobile traffic to Uber.
- Extended cash fare calculation service to support rounded fares.

**Full Stack Engineer**, Imgur, Inc. 2013 – 2016

- Developed a real-time notifications server with 60,000 concurrent users. Increased mean time between failures (MTBF) from hours to months by fixing deadlocks and crashes. Decreased mean time to repair from hours to seconds by adding software load balancing.
- Created a consumer-facing video conversion tool (React.js, PHP, RedisMQ) with over 160,000 monthly active users and 1 million videos (imgur.com/vidgif), scaling up to over 10,000 concurrent users at launch day.
- Onboarded to standard unit test framework (varnishtest) and added change control to Varnish 2.1 configuration (HTTP router, caching, and reverse proxy). Decreased serious incident rate of routing changes from multiple per quarter to 0.

**Lead Engineer**, Robot, Robot & Hwang, LLC (Contractor) 2014

- Developed a real-time war game tournament for automated social bots on Twitter. Created a wire-compatible Twitter API and backtesting system for 6 teams of data scientists to run algorithms against. Created a distributed Twitter API scraper system that leveraged celery and celerybeat for distributed, fault-tolerant scraping.

**Payments Engineer**, ConsoliBYTE Solutions, LLC 2012 – 2013

- Integrated payment processing backends for Stripe, Braintree, Paypal, and other processors while maintaining PCI DSS 2.0 and 3.0 compliance.<sup>1</sup>
- Implemented new features like quotes and inventory tracking that extended the data model and tables (PHP / MySQL).

**Skills**

Languages: Go, Ruby, Python, Erlang, Java, R, JavaScript

Software: Rails, Cassandra, PostgreSQL, OTP, Redis, Twemproxy, Varnish, Puppet, Graphite, StatsD

**Education**

**2010 – 2013** Rochester Institute of Technology (Computer Science)

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<sup>1</sup>Note, ChargeOver, for business reasons, stores the PAN — the full credit card number — and expiration and postal code, so it is subject to a higher level of security and auditing.

**2006 – 2009** Member of the software team for FIRST Robotics Competition Team 166 focused on visual and imagery processing on embedded C++ on VxWorks 6.3 RTOS. Cumulative record of 40-41-1.