Reza Lotun

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Citizenship: Dual Canadian and British

Skills

Technology/Area	Context
Programming Languages	Python in server-side, web, desktop applications and open source. Scala and the JVM for services and Hadoop workflows. Use of C/C++ and Objective-C for desktop development. Matlab in a research environment. Some frontend experience using HTML/CSS and Javascript using JQuery.
Distributed Systems	Asynchronous network development using Twisted and Finagle. Distributed coordination with Zookeeper. Web MVC devlopment using Django. Multi-million user accounts and analytics systems and service data using Memcached, Redis, and Cassandra. Design and implementation experience with HTTP REST apis and Thrift. Experience in interfacing with OAuth and its variants for services like Facebook, Foursquare and LinkedIn.
DevOps	Amazon AWS (EC2, Elastic Load Balancing, Autoscale, SimpleDB, S3, RDS, Elastic MapReduce) and Google AppEngine (Mail services, Task Queues, Bulk Loading to Datastore). RabbitMQ and Celery for delayed processing.
Large-Scale Data	Large scale analysis of user data using Hadoop (Scalding)

Work Experience

- **Twitter Inc. (twitter.com)**   San Francisco, CA
  Software Engineer   *April 2012 - Present*
    - Member of the Platform Analytics team - I work on the infrastructure for real-time collection and processing of data generated by the Twitter platform. The aim of the group is to derive insights and understanding of how developers and clients are using the Twitter platform.
    - Use Scala and Finagle to build services which consume the Twitter firehose and store processed results in Cassandra
    - Large scale batch processing using Hadoop and Scalding (a Scala interface to Cascading)

- **Twitter UK (twitter.com)**   London, UK
  Software Engineer   *June 2011 - March 2012*
    - Infrastructure lead for TweetDeck focusing on migration of the TweetDeck infrastructure across datacenters from AWS to Twitter
    - Wrote migration logic for datastore from Amazon SimpleDB to Cassandra, and designed migration plan
    - Implemented photo proxy api service for new TweetDeck client releases, allowing the posting of pictures to Twitter via mutliple photo services.
    - Wrote TweetDeck for Mac cocoa wrapper in Objective C as a Webkit view with a Javascript bridge to an HTML5 core application and got it approved and submitted to the Mac AppStore.
    - Worked on the TweetDeck for Windows native application wrapper in C++ and Qt.

- **TweetDeck Inc.** (`tweetdeck.com`) London, UK
  Head of Infrastructure *May 2009 - May 2011*
  – TweetDeck was acquired by Twitter in June 2011
  – Helped build the TweetDeck engineering team from 3 engineers to 10
  – Designed and implemented much of the TweetDeck REST api in Python and Twisted
  – Managed operations for TweetDeck's infrastructure on Amazon Web Services (AWS), using EC2, Autoscaling and Elastic Load Balancing for running services, and Amazon SimpleDB and Elasticache for storage and caching
  – Implemented the TweetDeck scheduled update service on RabbitMQ and Celery, and the Deck.ly "long tweet" and url shortener service using Redis and Amazon S3
  – Created TweetDeck's analytics collection system with Nginx, Twisted and Redis, and performed large scale analysis with Elastic MapReduce and Hadoop streaming
  – Created a mail delivery system on top of Google AppEngine before moving to Amazon SES
  – Built internal tools and systems including social network crawlers and backend libraries for accessing Twitter, Facebook, Foursquare and other services and internal status monitors.
  – Managed the build process for desktop and mobile clients using Buildbot for CI. Also managed source control, initially hosting all company source code on Mercurial and eventually moving everything to Git on GitHub.

- **Peer Technologies Limited** (`www.getpeer.com`) London, UK
  Senior Software Engineer *March. 2008 - May. 2009*
  – This company was acquired by TweetDeck Inc in May 2009
  – Main product a Windows XP/Vista and Mac OS X Leopard desktop application and backend service for sharing web search data in work and groups as a means of social discovery
  – Implemented the backend service on Python and Twisted over Amazon Web Services
  – Extensive work on the core desktop application logic and framework using Python, Twisted, wxPython, apsw and PyCrypto
  – Interviewed candidates and managed two junior developers

- **Worio (Zite Inc.)** Vancouver, BC
  Software Engineer *Sep. 2005 - Sept. 2006*
  – This company was acquired by CNN in August 2011. I left after a year to return to my MSc work at UBC.
  – One of three initial software engineers at a web search engine startup, that was a spinoff of the Laboratory for Computational Intelligence at the University of British Columbia
  – I implemented the document processing and feature extraction system of the distributed web crawling, indexing and ranking system
  – Operations and systems administration work on servers, including physical installation, setup and maintenance

Education

- **University of British Columbia** Vancouver, BC, Canada
  M.Sc. *Computer Science* *Sep. 2004 - Feb. 2008*
  – `Supervisor`: Prof. Mike Feeley, Distributed Systems Group
  – `Thesis`: Online statistical processing of wireless packet data to detect patterns of interference.
  – `Coursework`: Machine Learning, AI, Game Theory, Complexity, Bioinformatics

- **University of Toronto, Trinity College** Toronto, ON, Canada
  Hon.B.Sc. *Computer Science, Mathematics* *Sep. 2000 - Apr. 2004*

Articles and Research Publications

AWS Python developer center article: **Taming the AWS Datastore Hydra with Python**
`http://aws.amazon.com/articles/3997`

Guest post for AppEngine Blog: **TweetDeck and AppEngine: A Match Made in the Cloud**
`http://googleappengine.blogspot.com/2010/04/tweetdeck-and-google-app-engine-match.html`

K. Cai, R. Lotun, M. Blackstock, M. Feeley **Wireless Unfairness Can Be Eliminated With a Wired Router, But It's Hard** *Ninth Workshop on Mobile Computing Systems and Applications (HotMobile 2008)* February 2008.

R. Lotun, K. Cai, M. Feeley. **Dynamic Clustering of Interference Domains on Large Scale 802.11 Networks** *Poster in the Workshop on Statistical Learning Techniques for Solving Systems Problems at NIPS 2007* December 2007.

K. Cai, M. Blackstock, R. Lotun, M. Feeley, C. Krasic, J. Wang. **Wireless Unfairness: Alleviate MAC Congestion First!** *The Second ACM International Workshop on Wireless Network Testbeds, Experimental evaluation and CHaracterization (WiNTECH 2007) in conjunction with ACM MobiCom 2007*, pp. 43-50. Montreal, Canada, September 2007.

K. Cai, M. Blackstock, R. Lotun, M. Feeley, C. Krasic. **Toward Fair Wireless Experience in Large 802.11 Networks Using Real-time Traffic Shapers.** *Poster in the Eighth IEEE Workshop on Mobile Computing Systems and Applications (HotMobile).* Tucson, February 2007.

Teaching Experience

- **University of British Columbia**   Vancouver, BC
  Teaching Assistant, Computer Science   *Sep. 2004 - May 2007*
  - Two semesters of CPSC 221, *"Basic Algorithms and Data Structures"*, which taught a mix of discrete mathematics, algorithm analysis and programming in C++. Led three 2 hour combined tutorial/lab sessions per week, comprised of one hour presentation of additional class materials in a lecture format, and one hour of computer lab supervision. Also graded midterms and exams.
  - Two semesters of CPSC 213, *"Introduction to Computer Systems"*, a course introducing C, Unix file I/O, threading, and sockets. Led three 3 hour tutorial/lab sessions per week. Graded midterms, quizzes and exams.