Sairam Krishnan

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SUMMARY

Software engineer with 6+ years of work experience and specializations in embedded systems, cloud computing, and machine learning

EDUCATION

Carnegie Mellon University, Pittsburgh, PA

- M.S. in Electrical & Computer Engineering, Dec. 2014 [GPA: 4.00/4.00]
- B.S. in Electrical & Computer Engineering, May 2014
- Minor in Business Administration, May 2014

SKILLS

- **Languages** - English, Tamil, Spanish, French, Italian, Chinese
- **Programming Languages** - C/Embedded-C, C++, C#, Go, Java, Scala, Python 2/3 (+Pandas), PowerShell, Bash, Zsh, Awk, Perl, HTML/CSS/JavaScript, Matlab, GNU Octave, R
- **Cloud Computing Technologies** - Apache HBase and Hadoop, Apache Cassandra, MongoDB, Microsoft Azure Cosmos DB and SCOPE QL, Amazon Web Services (CloudWatch, SNS, S3, EBS, EC2, Elastic MapReduce, DynamoDB), Google AppEngine and Cloud, Heroku
- **General Tools and Technologies** - Windows, Linux, HTTP, SSL, TCP/IP, J2EE, JQuery, XML, AJAX, MySQL, Hibernate, Spring MVC, Django, Play!, Undertow, Bootstrap, Node.js, Express.js, ASP.NET MVC, Android, OpenCV, OpenNI, OpenMP, SIMD, CUDA, Arduino, Raspberry Pi, Vim, Eclipse IDE, Visual Studio, Git, Subversion, Perforce, Selenium

EMPLOYMENT HISTORY

Amazon Alexa SDE II (04/2018 – Present)

- Optimized user registration process to cut customer complaints by 10x.
- [Team Lead] Created GraphQL-based data aggregator with intelligent caching within Alexa Engine to improve modularity and reduce latency
  - [Appetizer] Saved $17K per client service per month

SIG Senior Data Engineer (11/2016 – 03/2018)

- [Team Lead] Utilized C++, Pandas, and Django to visualize firm's market-making transactions, generate real-time FINRA compliance violation reports

Microsoft OSG Core Software Engineer (03/2015 – 10/2016)

- Established Windows Phone 10 OneSync power-consumption targets (4x reduction from Windows Phone 8)
- Leveraged telemetry in real-time dashboards and weekly guidance reports to management

Amazon Web Services (AWS) SDE Intern (05/2014 – 08/2014)

- Achieved 15% speedup in logging system for 8M+ customers
- Deployed script to build call traces and gather metrics from logs

LeanFM Technologies Full-Stack Web Developer Intern (12/2013 – 02/2014)

- Developed Django admin interface for building managers
- Utilized Dojo Toolkit for 3D building visualization front-end

Web Applications Course Developer (05/2013 – 12/2013)

- Created cloud platform for course administration
- Instructed 105+ students as final projects' Agile Product Owner

NSF Cyberphysical Systems Researcher (02/2013 – 08/2013)

- Designed bacterial simulator to replace live culture experiments and integrate previous small-scale models

RELEVANT COURSEWORK

- **Amazon Machine Learning University**
- **Google TensorFlow Tutorials**
- **CMU** - Cloud Computing, Web Applications Development, Financial & Managerial Accounting, Microeconomics I, Java Smartphone Development, How to Write Fast Code, Distributed & Real-Time Embedded Systems, Cyber-Intelligence & Cyber-Warfare
- **Coursera** - Fundamentals of Quantitative Modeling, R Programming, Intro to Spreadsheets and Models, Statistical Inference, Machine Learning, Foundations of Scala Programming, Programming with Google Go

PROJECTS

LinkedIn Extractor, Spring 2016

Constructed NodeJS API to extract user's LinkedIn profile details. Used to build professional website for my dad

Bing Rewards Points Bot, Fall 2015

Launched bot to automate Bing searches daily to accumulate points

Synonyms Crawler, Spring 2015

Designed web crawler to generate N-levels of synonyms for user-specified word; displays results in D3.js tree, with 1st matching Google image for each node.

Drone-Megaddon, Fall 2014

Implemented end-to-end cyberphysical system in which high-level, StarCraft-like RTS interface could be used to control drone swarms.

Real-Time Embedded Linux Kernel, Fall 2014

Refashioned Android kernel into energy-aware RTOS via smart task scheduling and partitioning schemes

Embedded Capstone: Hand-2048, Spring 2014

Reconfigured hit game 2048 to use hand-motions as inputs; utilized Raspberry Pi and Asus-Xtion-Pro motion sensor in motion-sensing-and-actuating framework

Cloud Computing, Spring 2014

- *End-to-End AWS-based Cloud Service*: Developed 2nd most cost-effective and peformant RESTful front-end API for analyzing 200 GB Twitter tweet corpus; leveraged Amazon's Elastic MapReduce to ETL corpus into HBase backend
- *Twitter Hashtag Similarities*: Computed 50-GB corpus' hashtag pairs' co-occurence counts via Hadoop, achieved 78% speedup over default solution
- *Wikipedia Page-Views Timeline*: Tracked Wikipedia 2014 English articles' monthly view counts via Elastic MapReduce; achieved $20 operating budget
- *N-an-Instant*: Simulated Google-Instant using n-grams from 10000-book corpus & Bayesian statistics
- *Image Taxonomy Interface*: Developed front-end interface to select from 256-categories/30607-images in DynamoDB.

MedHub: Medical Issues' StackOverflow, Spring 2014

Devised Android app to address patients' medical issues through crowd-sourcing, find nearby pharmacies, and track physical activity

Discrete-Time Elevator Simulation, Fall 2013

Led team in waterfall development process to implement the class's most robust and best documented time-triggered CAN-network-based Java elevator simulation

Stock Exchange Web Application, Spring 2013

Created J2EE-based, MySQL-backed online stock exchange, with bot AI to manipulate liquidity and tag clouds showing most popular stocks