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

Wharton School of Business, University of Pennsylvania
- M.B.A, May 2024 - March 2026

🎨 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

Apple Senior Software Engineer (02/2021 – Present)
- Constructed Knowledge Graph to aggregate music, books, podcasts, and TV data from multiple input sources into a single Apple-standardized format; use ML (~K-Means) for consolidation; drives recommendations + lyrics and credits generation.

Amazon Alexa Senior Software Engineer (04/2018 – 02/2021)
- [Team Lead] Created GraphQL-based data aggregator with intelligent caching to improve modularity and reduce latency. *Saved $40M per year*.
- Optimized user registration process to cut customer complaints by 10x.

SIG Senior Data Engineer (11/2016 – 03/2018)
- [Team Lead] Utilized C++; Pandas; Django to analyze firm's market-making transactions and detect FINRA compliance violations in real-time.

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 reports

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

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

📖 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 MySQL online stock exchange with bot AI to manipulate liquidity and recommend stocks