

# KARTHIK LAKSHMI NARAYANA SARMA

Portfolio: <http://karthiksarma.me>

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## OBJECTIVE

Collaborate and build scalable, distributed, fault tolerant applications and enhance my skills through open source contribution.

## SUMMARY

- Experience in working with microservices, container and container orchestration platforms (Apache Mesos, Kubernetes, Docker).
- Expertise in building applications which handle high volume of data and provide resiliency, fault-tolerance and availability.
- Equipped in writing code with functional programming paradigms and lazy loading (Java 11, streams, lambda, functional interface).
- Proficient in working with big data systems, NoSQL data stores.

## EDUCATION

Arizona State University, Tempe, AZ, U.S.A.

Jan 2015 – Dec 2016

Master of Computer Science (MCS). Overall GPA 3.5

University of Kerala, Trivandrum, Kerala, India.

July 2009 - May 2013

Bachelor of Technology (B.Tech) in Computer Science and Engineering. Overall GPA of 3.5.

## EXPERIENCE

Senior Software Engineer – [Microsoft](#), Redmond, Washington

Dec 2022 - Present

### ➤ OneDrive and SharePoint

- Improved database Infrastructure management for SharePoint.
- Reduced job latency by introducing async execution.
- Enhanced reliability of database monitors.
- Enhanced developer productivity by introducing updated code management libraries.
- Reduced COGS by cleaning up unused azure resources.

Software Engineer II – [Microsoft](#), Redmond, Washington

April 2020 – Dec 2022

### ➤ OneDrive and SharePoint

- Improved database Infrastructure management for SharePoint.
- Configured alerts for database gestures and implemented auto-heal scripts to fix issues.
- Implemented monitoring mechanism for finding error count, reliability, latency, and API gateway errors.
- Identified/mitigated scalability issues with timer jobs which periodically monitor azure resources.
- Contributed to a domain-less reliable computational infrastructure.

Software Engineer III– [Cisco](#), San Jose, California

June 2018 – April 2020

### ➤ Cisco DNAC – Digital Network Architecture

- Contributed to a real time streaming platform to analyze, manage and troubleshoot networking devices.
- Full stack development with Java 8, Jax-RS, Apache beam, gremlin tinker-pop and elastic-search.
- Developed REST API's to extract device metrics from device platform.
- identified usage statistics, enhanced streaming workflows and implemented troubleshooting mechanism with monitoring tools.
- Implemented API to fetch real time issues generated by network devices.
- Proficiency with Apache flink, Apache beam, kubernetes, elastic-search, Java 8

Software Engineer II– [Orion Health](#), Scottsdale, Arizona

Dec 2017 – June 2018

### ➤ Business Intelligence & Analytics

- Enhanced medical analytics platform developed using Apache Spark Streaming, Scala, Kafka and Elastic-Search.
- Implemented ETL jobs which aggregate meaningful attributes from healthcare data.
- Built a stable platform which handles high volume of real time data and provide metrics for the end user.
- Programming in Apache Spark using Dataframes, Datasets, RDD, and DStreams.
- Well acquainted with git source control system, jira issue tracker, Jenkins pipeline and amazon web services.

Software Engineer I– [Orion Health](#), Scottsdale, Arizona

Jan 2017 – Dec 2017

### ➤ Business Intelligence & Analytics

- Contributed to a medical analytics platform developed using Apache Spark, Scala, Java 8 and Elastic-search
- Rest API development using Java 8, J2EE, JAX-RS, REST services
- Front end user interface development using React, ES6, Webpack, Redux, Javascript
- Work closely with team on features and peer review other developer code.

Application, Demo and Development Intern – [Alcatel](#), San Diego, California

May 2016 – Aug 2016

➤ **Microservices and cloud platform**

- Developed REST'ful services in Go lang for an application in the IoT domain.
- Managed distributed cluster and helped production release via Docker image.
- Proficient in application production and deployment using Apache Mesosphere, Apache Marathon and Docker machine.
- Developed skills in Linux virtualization using QEMU, KVM, libvirt.
- Used Amazon Web Services (AWS) / Elastic Cloud Compute (EC2).

**PROGRAMMING SKILLS**

- **Programming Languages** – Core Java, J2EE, Go lang, SQL, C, C++, HTML, CSS, React JS, Node JS, R, Scala
- **MVC Frameworks** - Spring MVC, JAX-RS, ExpressJS, Gorilla
- **Familiar IDE's** – IntelliJ, Eclipse, Sublime, Visual studio, PyCharm, Vi, Atom
- **Big-Data & Cloud Technologies** - Apache Spark, Apache Mesos, Apache Marathon, Docker, Hadoop MapReduce

**PROJECTS**

- **SCALING COMPUTATIONAL GEOMETRY IN DISTRIBUTED PLATFORM - APACHE SPARK** Jan 2015 - May 2015
- Computational geometry simplified through distribution over cloud.
  - Deployment in a cluster managed by 1 master and 3 slave nodes.
  - Data Coordinate storage in Hadoop HDFS.
  - Application developed in Java using spark libraries and spatial geometry operations implemented using JTS topological library.
- **MODELING DISCOURSE CENTRIC DATA ( Java, JSP )** Jan 2015 – May 2015
- A personalized support application to improve the learning experience of users by modeling data from learning
  - Forums. (Algorithm used - Topic Facet Modeling)
  - Automatically detects conceptual topics from short amounts of texts present on posts (taken from stack overflow dataset).
  - Uses D3 visualization to show analysis results & finds whether a post is valuable or not.
- **ANALYTICS DASHBOARD FOR TOPIC - POST SIMILARITY IDENTIFICATION (R, D3 Visualization)** Jan 2016 – Apr 2016
- Analyzing the Cross Validated forum content consisting of 14000 posts.
  - Discovering the most frequently used topics and their relations.
  - Identified significant posts through plots drawn based on cosine similarity between post – topic content.
  - Web plot shows which user contributions are important.
- **WIKI GENERATOR (Express JS, Mongo DB, Node JS)** Jan 2016 – Apr 2016
- An application for generating wiki out of chat messages.
  - Allows users to chat on numerous topics and show statistics for identifying quality information based on topics.
  - Users can tag when sending a chat message and like other valuable messages. The like count is used for generating statistics.
  - Wiki generation based on contents receiving likes greater than a threshold and wiki categorization based on tagging.
- **IDENTIFYING OPTIC DISORDER FROM RETINAL IMAGE (Python, Scikit)** Jan 2016 – Apr 2016
- Analyzed data set of optical images and classification done to determine if a given image attribute is susceptible to disease.
  - Data set consists of attributes from optical image of patients.
  - Used different classification techniques such as random forest classifier and AdaBoost classifier.
  - Predicted disease from symptoms with 84% accuracy through data mining techniques.
- **10 YEAR US OPEN STATISTICS DASHBOARD (jQuery, Javascript, D3 Visualization)** Sep 2016– Dec 2016
- 10 year US Open championship analysis using D3 visualization
  - Yearly graph plot shows all games sorted by year.
  - Shows Error Statistics of opponents for each player when clicked.
  - hover pie chart and histogram to know individual player statistics

**COURSES**

- Foundations of Algorithms
- Software Security
- Data Mining
- Data Visualization
- Distributed Database Systems
- Semantic Web Mining
- Technologies for online learning
- Distributed Software Development
- Software Analysis and Design
- Applied Cryptography