# KARTHIK SARMA
**Portfolio**: http://karthiksarma.me

**Github:** https://github.com/karthiklsarma                    **Linkedin:** https://www.linkedin.com/in/karthik-sarma-6713b416

## 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 (Kubernetes, Apache Mesos, 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 8 Stream API, lambda, functional interface).
- Proficient in working with big data systems, SQL and NoSQL datastores.

## 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

**Software Engineer II– Microsoft**, Redmond, Washington                                    Present
  - ➢ One Drive and Sharepoint

**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, Java 8 and elasticsearch.
- 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 and 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).
- Developed troubleshooting skills through log analysis and built hands-on experience in implementing design patterns.

## 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