

KARTIK ANIL REDDY

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PROFESSIONAL CERTIFICATIONS (Github link: <https://github.com/Pajkouisn>):

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| • AWS Certified Solutions Architect Professional | Since Mar '19 |
| • AWS Certified Big Data Specialty | Since Nov '19 |
| • AWS Certified Solutions Architect Associate | Since Mar '18 |
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EMPLOYMENT:

Black Knight Financial Services, Platform Architect

Since June '19

Member of the development and leadership team with focus on architecting and building a robust, scalable, reliable, cost efficient and highly accurate Virtual Assistant called AIVA who's sole mission is to improve the borrowers and lenders experience in the mortgage industry.

- POC and migration of AIVA from servers to adopt a serverless model. This change reduced her operational cost from ~\$80,000 monthly to ~3,000 monthly and vastly improving scalability. Our success story here was presented at the AWS New York Summit in "Building Serverless ML Platforms for Financial Services".
- Leading enterprise design and implementation for integrating AIVA with LOS systems across the US like BYTE, H2O and Empower thereby allowing AIVA to be marketed as a LOS agnostic platform in the mortgage industry.
- Leading the Design and implementation of AIVA's Know and Translate work patterns using AWS services like Neptune, SageMaker, Lambda, VPC, Api Gateway, Elastic Cache, Step Functions, DynamoDB and Aspose Image Processing. The "Know" work pattern is AIVA's knowledge base and houses her business logic, used by every component throughout the system, while the Translate work pattern converts AIVA's lexicon or terminology into any customer's expectations (especially complying with industry MISMO standards).
- Leading the design and implementation of AIVA's Read, Learn and Comprehend platforms. AIVA's sophisticated machine learning platform is what gives her the edge over others in terms of similar document indexing and metadata extraction platforms.
- Leading the efforts in identifying security vulnerabilities in AIVA and enforcing remediation through using a sophisticated CICD platform.
- Leading the design and implementation of AIVA's image processing capabilities in OCR, Splitting and Merging PDFs using technologies like Tesseract, AWS Textract, Lambda, API Gateway, Aspose, Step Functions, DynamoDB, DynamoDB Streams, Kinesis and ECR, ECS and Elasticsearch.
- Architecting and implementing a solution for ensuring the platform is PCI DSS compliant using a combination of image processing, contextual rules and machine learning.
- Architecting and implementing enterprise solutions to integrate with some of the largest mortgage lenders in the United States to download and process documents from the lenders. The solution included a push and pull based mechanism to retrieve documents as soon as they are available for processing.
- Designing AIVA's new skill of auditing loan boarding for Black Knight's servicing clients.

Comcast Corporation (Populus Group LLC), Big Data and Software Engineer

Nov '17 to June '19

Building a wholesale, highly scalable and automated platform called "Timeline" to facilitate real-time ingestion, analytics and prediction for large scale data. Part of multiple teams like Elements (real-time ingestion) and Clairvoyance (near real-time analytics).

- Built an ETL tool (using Mapreduce and Data pipeline) to migrate all legacy data (3 billion records) from on-premise hardware onto AWS. This ETL tool facilitated migration from Hbase to S3, S3 to DynamoDB and DynamoDB to DynamoDB.
- Developed a real-time ingestion ETL tool (using Apache Flink, Kafka, NiFi, Kinesis, EMR) for consuming data (16,000 records per second) from Kafka servers and pushing them into Kinesis Streams for further analytics and consumption onto the Timeline UI.
- Helped develop a REST api for producers to push their data onto the timeline platform for analysis. Designed and implemented an infrastructure orchestration tool to facilitate this entire process (RDS, Elastic Beanstalk, Kinesis, Lambda, EMR, S3).
- Built a DateTime conversion library integrated with Jolt Transformations to allow conversions between all 5 major US timezones and across 40 formats used across various products. This library can be used independently or can be invoked using Jolt Specifications.

- Built a real-time ingestion hook using Apache Flink to consume data from Apache Kafka, apply transformations (deserialization, normalization, encryptions, etc) and put into Kinesis Streams for further processing by downstream analytics components (Flink, EMR, Kafka, Kinesis, KMS).
- Built an analytics platform called Clairvoyance that consumes 10 million records/minute from Kinesis streams and transforms it for ingestion into business analytics tools like Interana and Pointillist (using tools like AWS Lambda, Kinesis, DynamoDB, S3, Firehose, Jolt Transform, KMS and SNS).
- Automated a pipeline to convert data from json into parquet using Apache Spark, EMR, DynamoDB, Cloudwatch and AWS lambda functions. This parquet data, stored on S3 is queried using Athena.

HeavyWater Solutions Inc, Software Engineer, Machine Learning

Jan '17 to Nov '17

Build a product to liberate human talent from drudgery by automating various tasks in the Mortgage/Insurance industry.

- Built a scalable platform entirely on AWS called AIVA (Artificial Intelligence Virtual Assistant) which can perform multiple skills. Worked on the skills for reading and comprehending documents which includes File Intake, OCR, Document Classification and Entity Extraction/Classification orchestrated through multi-level workflows (SWF).
- Designed and built a continuous integration pipeline that enables flow and deployment of artifacts through the various stages and environments of AGILE Development (Development, Test, Exploratory and Production) using GitHub, S3, Cloudformation, API Gateway and Jenkins.
- Built an Intake/Output and Packaging Component that can perform zip/unzip operations and allows dual communication between S3 and a secure FTP server, via EC2 instances.
- Created an Elasticsearch domain with dynamically adjustable configurations to index over a million documents. Also built interactive webservices that allow interactions (Create Index, Delete Index, Index and Search documents) with this domain using API Gateway and Lambda functions.
- Used the Tesseract open source OCR engine to transform Images to XML and eventually JSON so that the data can be consumed and processed easily for other applications such as Entity Extraction and classification. The webservice was designed to run on ECS and save the
- Built REST applications using the apache and spring frameworks to train, extract and classify Addresses, Dates, Currencies, Names, Phone Numbers and other document information from an input JSON file that contains all words and their coordinates present in that document. Followed the microservices architecture by building independent webservices for each functionality using Lambda, EC2 and API Gateway.
- Configure UI to access and display documents to Operators based on their access levels (Using DynamoDB, SQS and S3). The operators can review and modify the classified data and submit the changes. This feedback is used for training the classification algorithms.

PROJECTS:

DDI Analysis: Analyzing drug-drug interactions using Python and C++.

FL/ Sept '16

- Obtaining a database of drug-interactions and drugs from Medline. Extracting mesh terms and calculating z-score and probability of interaction between drugs. Parallelizing the program using threads.

ZIKA ANALYSIS: Mining tweets about the Zika virus in Florida using Python.

FL/ July '16

- Creatively collected Zika virus tweets restricted geologically for data mining, sentiment analysis and centrality leveraging on Natural Language Processing & Python twitter APIs.

EDUCATION:

University Of South Florida

Master of Science in Computer Science

GPA: 3.88 / 4.0

Tampa, Florida, USA

Graduated Dec' 2016

Pune Institute of Computer Technology (PICT)

Bachelor's Degree in Computer Engineering

GPA: 3.1 / 4.0

Pune, India

Graduated May' 2015

TECHNICAL SKILLS:

Programming Languages: Java, Bash/Shell, Python, Javascript, C, C++, Scala

AWS: EMR, Elasticsearch, Elastic Beanstalk, EC2, ECS, API Gateway, S3, DynamoDb, SQS, Cloudformation, Lambda, SNS, Route53, SWF, Workspaces, Data Pipeline, Kinesis, Cloudwatch, Sagemaker.

Apache: Spark, Flink, Kafka, Hadoop, Maven, Tomcat, NiFi.

Database: PostgreSQL, MySQL.

Others: Git, Android SDK, Linux, MacOSX, Jenkins, REST, Spring, LucidChart, Weka, Tesseract, Jolt, Multi-mechanize, Datadog.
