Hemendu Roy

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EDUCATION

Candidate for Master of Science in Computer Science Expected May 2023
Arizona State University, Tempe, AZ 3.89 GPA
Software Security, Mobile Computing, Cloud Computing, Advanced Network Security, Distributed Database Systems

Bachelor of Engineering in Electronics & Communication 2015 – 2019
R.V College of Engineering, India 3.84 GPA
Applied Mathematics, Advanced Data Structures, Java, Computer Communication Networks

EXPERIENCE

SEFCOM Laboratory at ASU, United States: 5G Cybersecurity Research Assistant 10/2021 - Present
Integrating Open Source 5G implementations such as free5gmano, free5gc and UERANSIM together and subsequently scanning for security vulnerabilities.

HPE Aruba, India: Software Engineer 09/2019 - 05/2021

- Aided in the development, scale-testing and deployment of real-time predictive Network Insights by consuming live telemetry data from 1M+ Access Points using Scala, Java, Oozie, Hadoop, Kafka.
- Developed scripts for Test Automation, Application Deployment and Data analysis using Spark and Python.
- Recognized with **three "Aruba Recognition Awards"** for outstanding performance

HPE Aruba, India: Cloud Engineer Intern 01/2019 - 08/2019
Implemented a Hadoop NameNode High Availability Architecture to ensure seamless failover of several applications scheduled in YARN and Oozie.

PROJECTS

Hand Gesture Recognition | CODE 2021

- Trained and developed a Convolutional Neural Network model to classify Hand Gestures
- Developed a mobile app using Android API 28 and Java
- Sent recorded gesture videos to a Flask web server
- Used cosine similarity to perform gesture recognition and push the result back to the Android app

BrainNet | CODE | REPORT 2021

- Demonstrated liveness detection of brain signals and compared performance parameters
- Developed a mobile app using Android API 28 and Java
- Sent the data to a Flask web server for processing
- Performed Feature Extraction using variants of DWT and Fourier Transforms
- Processed the data using Machine Learning models such as Support Vector Machines, Random Forest, Clustering and Multi-Layer Perceptron Classifiers

Scalable Facial Recognition System 2022
Developed a multi-tiered Facial recognition system

- Developed the model using Pytorch, keras, Tensorflow
- Used a Raspberry Pi to record footage. Face Detection frequency – twice per second.
- Used Flask and Gunicorn to create a web server
- Implemented the backend in 2 flavors, EC2 with autoscaling and AWS Lambda with Docker images in ECR.
- Used Amazon S3, DynamoDB to store data and Amazon SQS to relay messages

Open-source contributions
Apache Sedona – Implemented Flink API and SQL PostGIS spatial geometry functions in Scala, Python and Java
triangles – A python module that calculates triangle attributes using the Law of cosines and the Law of sines

TECHNICAL SKILLS

Languages: Java, Python, C/C++, Bash, Scala, Javascript, HTML, CSS, MATLAB
Technologies: Amazon EC2, AWS Lambda, Azure, Google Cloud, SQS, Kubernetes, Docker, Hadoop, Cassandra, Dynamo DB, MongoDB, PostgreSQL, Oozie, Airflow, Kafka, Ansible, Android Studio, Jenkins, Datadog, Grafana, VMWare, KVM, numpy, pandas, scikit-learn, ghidra, wireshark, Git, Simulink