

# Hemendu Roy

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## SUMMARY

Computer Science graduate student with 2+ years of experience in software development, object-oriented programming and microservices deployed in the cloud.

## 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

2021

Designed a mobile app that records and sends video footage to a server that employs a CNN model to classify gestures.

- Developed the app using Android API 28 and Java
- Used Flask to create an API
- Used cosine similarity to perform gesture recognition using a Convolutional Neural Network model

### BrainNet

2021

Demonstrated liveness detection of brain signals and compared performance parameters of several supervised and unsupervised Machine Learning models such as Support Vector Machines, Random Forest 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