

Educational Qualifications

Year	Qualification	Institute	CPI/%
2015-2019	B.Tech Computer Science & Engineering	IIT Kanpur	9.0/10.0
2015	All India Senior School Certificate Exam(CBSE)	KV No.2 Jammu Cantt.	94%
2013	All India Secondary School Exam(CBSE)	KV No.2 Jammu Cantt.	10.0/10.0

Work Experience

• Samsung R&D Institute India - Bangalore

Bengaluru, India

(Mar'23 - Present)

Lead Engineer

- Working on identifying bottlenecks and enhancing the Android rendering by adding improvements in the Android framework
- Developing an in-house Android profiling tool to benchmark Android rendering uniformly across various Samsung apps and devices

Senior Software Engineer

(Mar'21 - Feb'23)

- Developed on-device machine learning (ML) model that uses phone usage data to detect **boredom** while a user is using their phone
- Developed an end-to-end Android application to demonstrate the effectiveness of the boredom ML model to the stakeholders
- Worked on developing a deep neural network (DNN) model that uses phone usage data to predict **gender and demographic age**
- Developed the above model using TensorFlow Federated and Flower libraries to train it in a **Federated Learning (FL)** environment
- Developed a **differential privacy-based** ML solution for the problem of **destination identification and semantic location tagging**

Software Engineer

(Jun'19 - Feb'21)

- Developed Android application for visualizing depth maps & **3D Point-cloud** from Time-of-Flight (ToF) camera feed in real-time
- Developed gesture-based UI features such as Zoom, Pan, and Rotation for the point-cloud visualization module in the Android app
- Worked on developing an on-device privacy-preserving DNN model-based solution for the problem of **Next App Recommendation**
- DNN model was designed under strict memory constraints to minimize network bandwidth costs during various **FL** execution steps
- Developed and trained the DNN model in Java using the **DL4j** library so that it can be trained and used on-device on Android
- Developed an Android User Trial (UT) application that supported **FL, model training, and inference on-device** for the DNN model

Undergraduate Software Developer Internship

(May'18 - July'18)

- Developed Neural Network (NN) model to predict the current location of a user based on their recent locations and time of the day
- Developed a **simulation environment** for replicating which cell tower in a given area a user would be connected to while in transit
- Developed an ML classification model to predict which cell tower a user is most likely connected to at any time of the day
- Top-1 & Top-3 prediction accuracies** for the final model were **85-90%** and **90-95%** respectively on the evaluation dataset

• Hike Private Limited

New Delhi, India

(May'17 - Jul'17)

Undergraduate Software Developer Internship

- Implemented **Convolutional Neural Network (CNN)** models using Python and TensorFlow for an image classification problem
- Used Google ML-Engine APIs to train various CNN models on the Google Cloud for accelerated experimentations and training
- Developed Server-Client support using **TensorFlow Serving** for exposing REST APIs to generate predictions from the trained models

Patents and Publications

- PUBLICATION** Memory Efficient Federated Recommendation Model
2022 IEEE 16th International Conference on Semantic Computing (ICSC)
- PATENT** System and Method for Distributed Learning of Universal Vector Representations on Edge Devices ; US 17/946349 ; 2023
- Two more patents** have been filed and are in the publication process

Technical Skills

Programming Languages Python, JAVA, C/C++, Shell Script (Bash), Golang, LaTeX

Libraries TensorFlow, scikit-learn, Deeplearning4j (DL4J), Flower (Python), MPICH C++, OpenCV, Flask

Awards & Achievements

2022	Samsung SPOT Award , for excellent contributions and swift completion of project deliverables	SRIB, India
2021	Samsung SPOT Award , for excellent contributions and swift completion of project deliverables	SRIB, India
2020	Clean Code Culture Award , for rigorously following SOLID principles of Object-Oriented Design in project	SRIB, India
2020	Samsung Citizenship Award (SCA) , for outstanding performance, contributions, and management of project	SRIB, India
2018	Academic Excellence Award , for excellent performance in the 2017-18 Academic Year	IIT Kanpur

Positions of Responsibility

2022	Project Mentor , worked with and mentored multiple Interns in numerous projects	SRIB, India
2019	Project Mentor , mentored a group of 8 freshers in a project under the Association of Computer Activities (ACA)	IIT Kanpur
2018	Teaching Assistant , for <i>Data Structures and Algorithms</i> course under <i>Prof. Sumit Ganguly</i>	IIT Kanpur
2017-18	Event Manager , successfully organized various Robotics events and competitions in annual tech-fest Techkriti'18	IIT Kanpur