Nikhil Agrawal

Senior Engineer

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SUMMARY

2+ years working experience in **Samsung R&D Institute Bengaluru** on **Galaxy Buds project** after completing **M.Tech in Computer Science** from **IIT-Kharagpur**. Development and research work includes **BLE audio profiles** both at buds and phone side in collaboration with different chip-set manufacturers in **C++** and **Java** language. Worked on **AI** including ML and NLP also published a research paper at the international conference **CSoNet 2019**.

EDUCATION

M.Tech, Computer Science

Indian Institute of Technology, Kharagpur | 2017 – 2019

- Graduated with **8.93** CGPA.

B.Eng, Computer Science

IET DAVV, Indore | 2013 – 2017

- Graduated with **77.33%**.

EXPERIENCE

Samsung Research Institute Bengaluru

Senior Engineer | June 2019 – Present | Bangalore, India

Skills: *C, C++, Java, Python, Android, Bluetooth Low Energy audio*

- Developed ***vendor-agnostic*** layer responsible for **controlling media content** based on tap and touch events.
- Ownership of ***CIS-media (Coordinated Isochronous Stream)*** development and its integration with the Buds app layer.
- Developed an **android application** to collect **dataset for RSSI** based distance estimation.
- Trained various ML models for ***RSSI based distance prediction*** and deployed the same to mobile using Tensorflow lite.
- Closely collaborated with Qualcomm and Broadcom on the ***Samsung Galaxy Buds*** project.
- Data-set creation of different Bluetooth devices by extracting information from different Bluetooth manufacturer websites.
- Detection and resolution of anomaly pertaining to connection, pairing and disconnection in Bluetooth.
- Ported ***Qualcomm adaptive aptX codec*** to Samsung Galaxy phones.
- Well acquainted with the specifications released by ***Bluetooth SIG*** relating to different ***BLE audio profiles***.

PROJECTS

Improving aspect based ranking in clinical trials (MTP Project)

Skills: *Information Retrieval, Natural Language Processing*

- **Clinical Trials** are crucial for the practice of evidence-based medicine. In this research work, we developed an automated method that can be applied across all classes of disease to **retrieve relevant trials provided the disease information** by the user as a query and **relevant clinical trials as output ranked** on different aspects.

Automatic concept map generation from text based learning material

Skills: *Natural Language Processing*

- Generated a **concept map** from a document by first converting text to simple language, identifying important entities, finding the weighted relationship between entities, and then finally obtained a **visual representation of the relations between entities**.

Apparel Recommendation

Skills: *Machine Learning, Deep Learning, Natural Language Processing*

- Developed a **recommendation system of apparels** using **content based filtering** and calculating weighted score (syntactic, semantic, and image similarity) between products that are obtained from Amazon real-world data-set.

PUBLICATIONS AND ACHIEVEMENTS

- **Towards an aspect based ranking model for clinical trial search**. In International Conference on Computational Data and Social Networks. pages 209–222. Springer,2019.. S.Roy, K.Rudra, N.Agrawal, S.Sural, and N.Ganguly.
- Secured **AIR-197** *(out of 97k)* at the graduate aptitude test in Engineering **(GATE)**.

SKILLS

C++	**Java**	**Tensorflow**	**Tensorlfow-Lite**
Python	**C**	**keras**	**Android**