Debmalya Sur

MTech – Computer Science & Engineering – IIT (ISM), Dhanbad

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EXPERIENCE

Samsung Research Institute Bangalore (SRIB) —

JUNE 2023 – AUGUST 2023

- Worked on Render Thread Optimization
- The flow of my approach was first knowing how the UI gets rendered for android theoretically
- Worked on the texture optimization because if we can render the texture of a 3D model efficiently then the overall efficiency will increase
- Lastly, I came up with an algorithm which uses Huffman Encoding and which has a compression ratio of ~93%

ACADEMIC HISTORY

Indian Institute of Technology (ISM), Dhanbad —

Master of Technology in Computer Science & Engineering

AUGUST 2022 - JUNE 2024 | Current CGPA 9.09

Government College of Engineering & Ceramic Technology, Kolkata — *Bachelor of Technology in Computer Science & Engineering*

AUGUST 2018 - JUNE 2022 | Graduated with CGPA 9.87

Bhatpara Amar Krishna Pathsala, Bhatpara

12th: APRIL 2017 - APRIL 2018 – **92.4%**

10th: MARCH 2015 – MARCH 2016 – **93%**

SKILLS

- **Technical:** C++, C, Python, DSA, API, Agile Development
- **Limited Exposures:** HTML, Bootstrap, Flask, SQL, SQLite3, Tkinter

ACHIEVEMENTS

- I have written books on "C Programming Quick Start" etc. My Books
- Silver Medalist in my BTech college, 2022
- GATE CS AIR 405 on 2022
- 4th in Theory of Computation NPTEL examination, 2021
- Secure 127th rank in SEAMO, 2017 from South East Asia region
- Gold Medalist in High Secondary examination in Barrackpore to Kalyani region, 2018
- Gold Medalist in Secondary examination among boys' in Barrackpore to Kalyani region, 2016

POSITIONS OF RESPONSIBILITY

- I was the leader of my BTech Final year project and successfully able to make the coordination between the members of my team and delivered the project before time
- Lead 3–4-member team in various Hackathons

ORGANIZATIONAL PROJECT

A Clustered Federated Learning approach for non-Independent and Identically distributed data —

JUNE 2023 – (Currently On-going)

- Final year thesis of IIT Dhanbad under the supervision of Prof. Sachin Tripathi
- Working on the emerging technology Clustered Federated Learning
- In Internet of Medical Things (IoMT) non-IID data is the most relevant data
- My objective of this thesis work is to come up an architecture which will be communication efficient and scalable as well as works well for non-IID data
- I am planning to deal with the communication efficiency by dividing the network into clusters thus I am using CFL
- Extensive testing will be done with existing CFL based models

PERSONAL PROJECTS

- **Baud News —** *User-Specific News Web App*
  Flask | REST API | SMTP Server **WEB VIEW**
  - Developed login system where user can create their own accounts and on the basis of their preferences the news will be shown & the data is updatable
  - Used SMTP server to send verification emails
  - To update news, I have used Cronjob which updates news JSON file in every 2 hours

- **Smart Attendance System —** *IoT based Project*
  ML | IoT | Full Stack Development **GITHUB**
  - In this project I have tried to solve the issue of proxy attendance and the manual attendance taking issue
  - I have used ESP32 camera module to click picture, upload it on google drive via API, running a ML script to locate and recognize faces then upload a google sheet

- **Students' Registration System —** *Desktop App for college management usage*
  Tkinter | SQLite3 **GITHUB**
  - In this desktop application, I have implemented CRUD operations where the data will be stored into the local database
  - One can also download or generate the registration card of a particular student or all the class

- **Breast Cancer Detection —** *Classification problem with web application*
  Machine Learning | Streamlit **GITHUB**
  - In this project I have developed a classification model which will predict the tissues are BENIGN or MALIGNANT on basis of certain data inputs
  - Got 96.49% accuracy by Random Forest Classifier
  - I have made a usable front-end with streamlit