

Ravi Shankar Das

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EDUCATION

Indian Institute of Technology Kanpur

Masters of Technology in Computer Science - 7.71/10 GPA

Kanpur, UP

Aug 2021 – Jul 2023

WORK EXPERIENCE

Agatsa Software

Jul 2023 – Present

Software Development Engineer 1

Noida, UP

- Implemented a rule-based system to detect arrhythmia across **10** symptoms of ECG.
- Designed and implemented a noise reduction strategy, improving data quality in **1000+** ECG samples by **50%**.
- Enhanced peak detection algorithms, boosting ECG analysis accuracy by **40%** for **1000+** signals.
- Engineered an feature extraction model for BP prediction in **3000+** PPG signals.
- Developed a classifier for normal and abnormal PPG samples, achieving an accuracy of **82%**.
- Designed a **KNN** based-regression model for BP prediction, with an accuracy of **91%**.
- Implemented the prediction loop of **SVR** model in the firmware of the H360 device.
- Collaborated with the backend team to implement **blood pressure prediction API**.
- Worked with the Android team to integrate a feature for sleep data analysis from a smartwatch.
- Tech stack: C, C++, Python, MATLAB, Machine Learning, TensorFlow, Keras

RESEARCH WORK

MTech Thesis: Automated Bug Localisation in Android | Python, Shell, Appium, Frida, Android Studio

- Developed and implemented a framework for localizing crashing bugs in Android apps which successfully identified bugs within the top **10%** wasted effort for **80%** of the total benchmark.
- Improved the average wasted effort from **0.92** to **0.19** between the randomised and optimized algorithms.

PROJECTS

Social Media Platform | FastAPI, PostgreSQL, SQLAlchemy, Alembic, Python

- Developed a comprehensive API using **FastAPI**, handling user interactions and post management.
- Implemented key features including user registration, login, post creation, retrieving posts, and voting on posts.
- Integrated **JWT-based** authentication for secure user login and session management.
- Managed database migrations using **Alembic** to maintain schema consistency across environments.
- Utilized **PostgreSQL** for efficient and scalable data storage, implementing SQLAlchemy for ORM.

Whats the Meaning | HTML5, CSS3, JS, Socket.io, Web Scrapping

- Developed a UI for instant word meaning lookup with a single click, improving user experience.
- Implemented a robust client-server communication system using Socket.IO, ensuring real-time interaction.

ACHIEVEMENTS

- Secured ranks **40th**, **96th**, **98th**, **242nd** in online codechef contests, achieving **3*** with rating of **1628**.
- Secured **542/13626** global and **55/3702** india ranks in the meta hacker cup 2024 qualification round.
- Earned **6*** in algorithmic challenges and **5*** in C++ at HackerRank.
- Solved 300+ problems on leetcode and codeforces, with contest ratings of **1421** and **981**.

TECHNICAL SKILLS

Languages: C, C++, Python

Web Technologies : HTML5, CSS3, JavaScript, Bootstrap

Libraries/Tools: Numpy, Pandas, Matplotlib, FastAPI, TensorFlow, Keras, VS code, Postman

Other technical skills: Debugging, DSA, ML, Competitive Programming