UTKARSH RANJAN

Lucknow, Uttar Pradesh
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Education

Birla Institute of Technology, Mesra **November 2022 – Present**
Bachelor of Technology (Biotechnology) CGPA – 7.4 *Ranchi, Jharkhand*

Seth M.R. Jaipuria School **2018 – 2021**
10th – 92.6% — 12th – 88.25% *Lucknow, Uttar Pradesh*

Skills

Programming Languages: C, C++, JavaScript, Java.

Android Development: Jetpack Compose, Kotlin, Firebase, Auth.

Computer Fundamentals: Data Structures and Algorithms, Operating Systems, Object-Oriented Programming, Database Management Systems.

Tools: Git, GitHub, Linux Basics.

Projects

Jetpack Compose Android Chatting App | *Kotlin*, *Jetpack Compose*, *Material You*, *Firebase* **GitHub**

- Built a full-stack **chatting app** using **Jetpack Compose** with **MVVM architecture**, integrated with **Firebase** (Auth, Firestore, Storage, FCM) for real-time backend functionality.
- Implemented core features like **1-on-1 chats**, **stories**, **typing indicators**, **read receipts**, and **message reactions**, supporting all types of **media sharing** (images, videos, documents).
- Used **Material You** for dynamic theming and a responsive UI, ensuring a polished and modern user experience across devices and seamless animations.
- Integrated **Firebase Cloud Messaging (FCM)** for real-time push notifications, supporting background and foreground message handling and facilitating **CRUD** operations for users.

Online Multiplayer Chess Game | *Python*, *Socket.IO*, *Pygame*, *AWS* **GitHub**

- Developed a desktop chess game with **offline** (local two-player) and **online multiplayer** modes using **Python** and **socket programming** over **TCP** using the **SOCKET** module in Python with modular **object-oriented design**.
- Deployed the online server on an **AWS EC2** instance, enabling stable, real-time gameplay with custom reliability mechanisms.
- Developed the UI using Pygame with smooth drag-and-drop interaction, real-time feedback, and legal move highlighting.
- Implemented a **heartbeat mechanism** to detect disconnections and maintain session integrity between players and also optimized communication by transmitting only **minimal game state deltas**.
- Utilized **Socket.IO** to facilitate seamless communication and synchronization of collaborative tasks among multiple users in real-time.

ML Loan Default Prediction | *Python*, *NumPy*, *Seaborn*, *Matplotlib*, *Scikit-learn* **GitHub**

- Developed and compared multiple **machine learning models** (**Logistic Regression**, **Random Forest**, **XGBoost**) to predict loan defaults based on **borrower and loan data**.
- Used **data pre-processing** techniques like **scaling**, **one-hot encoding**, and imbalance handling with **SMOTE**, **ROS**, and **RUS** to improve model performance.
- Identified high-impact features including **DTI Ratio**, **Employment Status**, **Education Level**, **Age**, and **Loan Amount** for better **credit risk assessment.**

Achievements

- Global Rank of 3012 in Codeforces Round 1006 (Div-3) contest of Codeforces among 25,000+ contestants.
- Rated 3 stars on CodeChef. Max Rated – 1661
- Newbie at Codeforces, Max Rated - 1314