Sanjay P Lal

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Education

Indian Institute of Technology Delhi 2017 – 2022
B.Tech + M.Tech, Computer Science and Engineering New Delhi, India

Saint Soldier Public School 2014 – 2016
Class X & XII Jaipur, Rajasthan

Work Experience

iOS Developer Jul 2023 – 2024
TimesPro Mumbai

- Build and maintain iOS apps in **Swift** using **UIKit** and **MVVM** architecture with CocoaPods dependency management.
- Delivered features including Shimmer Loading animations; managed production builds and **TestFlight** deployment for QA.
- Participated in Agile/Scrum sprints, contributed to POCs, and ensured stability through rigorous testing cycles.

Software Developer Intern May 2021 – Jul 2021
Arth Rural Bangalore (Remote)

- Built an automated testing pipeline using **Appium**, **Selenium**, **TestNG**, and **Maven** via Eclipse IDE and Android Studio.
- Identified and documented bugs across multiple Android devices; optimized test scripts for cross-device compatibility.

Subject Matter Expert (Physics) May 2019 – Jul 2019
Youscore Solutions Pvt. Ltd. New Delhi

- Created structured JEE/NEET/AIIMS Physics content, video lectures, and test papers for competitive exam preparation.

Projects

Blood Viscosity Estimation App | ***Java, Android, OpenCV*** | **M.Tech Project, Prof. Kolin Paul** 2022

- Android app to capture video and compute blood viscosity using **OpenCV** image processing integrated in-app.
- Designed a 3D-printed attachment to hold blood sample container; used phone vibrations for coagulation simulation.

Misinformation Classification | ***Python, NLP, Deep Learning*** | **Prof. Abhijnan Chakraborty** Jan 2022 – Mar 2022

- Classified fake tweets using **LSTM** and hybrid models; benchmarked KNN, SVM, Random Forest, and Naive Bayes.
- Built dataset pipeline with vectorization and padding to compare model accuracy across architectures.

Adversarial Search — Pacman AI | ***Python*** | **Prof. Rohan Paul, Artificial Intelligence** Dec 2020

- Implemented **Minimax**, **Alpha-Beta Pruning**, and **Expectimax** for multi-agent Pacman gameplay.
- Designed evaluation function scoring **23.91/25** against class average of 21.52 using relative performance ranking.

Parallelized RWR Algorithm | ***C++, OpenMPI*** | **Prof. Subodh Kumar, Parallel Algorithms** Feb 2022

- Parallelized Random Walk with Restart using **OpenMPI**; used binary-indexed output files to eliminate write-queue bottlenecks, significantly improving multi-core performance.

Traffic Density Estimation | ***C++, OpenCV*** | **Prof. Rijurekha Sen, Design Practices** Mar 2021 – Apr 2021

- Estimated dynamic and queue vehicle density using **background subtraction** and image processing via OpenCV.
- Used multithreading to benchmark different methods and analyze runtime-utility tradeoffs.

Multiplayer Game | ***C#, Unity, Photon Networking*** Nov 2021

- Built a Unity multiplayer game supporting 20 concurrent players with lobby creation, team selection, and 5 avatars using **Photon Networking** for client-server communication.

Skills

Mobile & Systems: Swift, UIKit, MVVM, CocoaPods, Android, Appium, Selenium, C, C++, OpenCV, OpenMPI

Languages: Python (NumPy, SciPy, PyTorch), Java, C#, Standard ML, VHDL, ARM Assembly

Tools & Platforms: Unity, Photon Networking, Vivado, ARM Simulator, Git, TestFlight, TestNG, Maven

Human Languages: English, Hindi

Extra-Curricular

- Competed in inter-hostel Volleyball, Weightlifting, and High Jump; helped hostel secure **2nd** (2018) and **3rd** (2019) in General Championship.
- Volunteered at 3 blood donation camps (100+ units collected); participated in 2 mega awareness drives reaching 5000+ people.