Pranshul Lakhanpal

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Education

California Polytechnic State University, San Luis Obispo **Expected Graduation** June 2023

M.S. Computer Science (Sept 2022 – June 2023) |**GPA**: 4.0

Thesis Topic: Differential Privacy for anonymizing Physiological Data

- Exploring the **performance** difference of ML algorithms on **anonymized data** using **Differential Privacy**.
- Building a privacy protecting **edge-cloud computing** framework for training ML models.

B.S. Computer Science (Sept 2018 – June 2022) | **Major GPA:** 3.7

Relevant Coursework: ML Pipelining, Machine Learning, Computer Vision, Computer and Wireless Security, Computer Networks, Cryptography Engineering, Operating Systems, Distributed Systems, Databases, Data Structures and Algorithms, Data Science, Systems Programming, AI, Statistics, Object Oriented Programming.

Technical Skills

- **Languages:** Python, C, Kotlin, Java, SQL, HTML, Swift, CSS, JavaScript, SML, Bash, XML
- **Tools:** IntelliJ IDEA, Android Studio, Coding Blocks, PyCharm CE, Vim, Git, XCode, Unix, Linux
- **Libraries and Frameworks:** Django, OpenCV, Flask, MongoDB, Hadoop, PySpark, Pandas, Numpy, Scikit-learn, XGBoost

Work Experience

Software Engineering Intern – Qualcomm *June 2022 – September 2022*

- Built an **android** app with system privileges to run and summarize custom display, VR, and XR performance tests using **Kotlin** and **Soong Build system.**
- Remodeled logic to be compliant with **SELinux** directory access policy to store test data and results.
- Designed a lightweight custom app in **Kotlin** to **dynamically** generate different **automated** surfaces on display and mimic popular applications used by end users such as Twitter, Facebook, games, and camera applications.
- Created built in app methods to **measure** and assess the **performance** characteristics of the display.
- **Reduced** dependencies from **6-7** third-party applications for display performance testing.

Software Engineering Intern – Qualcomm *June 2021 – September 2021*

- Designed a **machine learning** model to **optimize** Stress Testing test selection algorithm.
- Used Python tools like **scikit-learn** and **Pandas** to collect, clean, and modify data to **train** the ML model.
- Trained models such as **XGBoost** and **Recurrent Neural Networks** to make intelligenttest suggestions.
- Initial testing of the models displayed **45-62% improved performance** as compared to random test generation system.

Software Engineer– Him Academy Public School *October 2020 – January 2021*

- Building a **Facial Recognition** Based timekeeping system for a safe and contactless attendance amidst the pandemic.
- Using Face enrollment via **OpenCV** and **Python** to gather the **dataset** for employees.
- Identifying people by extracting their face **embeddings** and using **deep learning** to train a facial matching model.

Software Engineering Intern – Codeducate *July 2020 – August 2020*

- **Led** a team of 4 people to **create** and **optimize** a Student and **Course matching Algorithm** in Python.
- Integrated a payment routing channel in the backend using the **PayPal API** and **Django** authentication system.

Projects

Open-Source Ad Server in iOS – Cal Poly *October 2020 – December 2020*

- **Created** an **iOS** app using **Swift** and wrote **API calls** to the **backend** to send and store user data and fetch ad data.
- **Learned** and **created** the login page and ad displaying page in **SwiftUI**.

CopSense Twitter Analyzer – CodeChella Hackathon *November 2020*

- Used the **Twitter API** to cyclically listen to the Twitter Stream and filter it by state location.
- Learned and implemented a **RESTful API** using **Flask** to fetch data from **MongoDB** database.
- Created a dashboard page using **HTML**, **CSS**, and **JavaScript** to display **sentiment analysis** of Twitter Stream data.