FREYAM MEHTA

Computer Science Undergraduate at IIIT Hyderabad

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EXPERIENCE

Software Development Engineer Intern
Initiative on the Forest Economy, Indian School of Business

📅 October 2021 – April 2022

- **Leading the end-to-end design, development, and deployment process** of the mobile-first application suite for the Forest Governance initiative [LINK].
- **Designing a secure and accountable platform** to resolve issues related to community forest rights.
- **Spearheading the creation of an intuitive and lightweight medium** for the community to record up-to-date information on the lands (their ownership, usability, resource value, etc.), ultimately helping in the research studies.
- **Leveraging the applications for a positive impact in over 300 local communities of Odisha, Ranchi, Himachal Pradesh, and Jharkhand** by directly benefitting the lives of 400-500 forest dwellers and community members.
- Google Cloud Platform   React Native   Android   MongoDB

Open Source Developer, Dask
Google Summer of Code 2021

📅 May 2021 – September 2021

Visualizing the Performance Characteristics of Dask Computations [LINK]
- **Redeveloped the computational task graph visualizations** by enhancing the visuals, while being mentored by **Genevieve Buckley** (Scientist, Monash University) and **Martin Durant** (Senior Software and Data Engineer, Anaconda).
- **Expanded the visual output from 11% to 40%** without compromising on the performance factor.
- Optimized the visualizations of existing dask collections **to push extra metadata** to the task graphs after discussions with partnering organizations such as NVIDIA.
- Dask   Python   Graphviz

OPEN SOURCE CONTRIBUTIONS

- **Google Cirq** [LINK] - Google's Quantum Framework for Noisy Intermediate Scale Quantum Computers
  - Creating **an optimized tool that highlights the difference between 2 quantum (Cirq-format) circuits** without affecting performance irrespective of the complexity of the circuits.
- **LLVM Multi-Level Intermediate Representation** [LINK] - A flexible infrastructure for modern optimizing compilers
  - Working on designing a tool to graphically understand the **transformations in the Intermediate Representations of data flow** in a program.

SKILLS

- **Expertise**: Python   C/C++   C#   JavaScript   MongoDB   Java   React Native   OpenGL/WebGL   Docker
- **Professional Proficiency**: Swift   Golang   NoSQL   REST APIs   DynamoDB   Perl
- **Elementary Proficiency**: PHP   Ruby on Rails   Rust

EDUCATION

Bachelor of Technology in Computer Science and Engineering (9.16/10 CGPA)
International Institute of Information Technology, Hyderabad, India

📅 Sept 2020 – May 2024

- **Dean's Merit List**: Spring 2021
- **Relevant Courses**: Data Structures and Algorithms   Software Systems   Operating Systems and Networks   Algorithm Analysis and Design   Computer Graphics   Convolutional Neural Networks   Data and Applications   Machine, Data, and Learning   Linear Algebra

PROJECTS

Data Aggregator and Classifier
Community-sourced Machine Learning

SpecieFi - Gamified Machine Learning Classifier [LINK]
- Developed a first-of-its-kind **offline-first gamified classifier android application for forest species community-sourced model learning** for BIPP's Forest Governance initiative.
- Integrated **accessibility-focused features** to simplify the user journey, specially fine-tuned for users with **limited reading or writing capacity**.
- Modularized the codebase to scale the application to a **general-purpose application** which supports any classifier.
- Directly benefited **over 200 community members** of Odisha, Ranchi, Himachal Pradesh, and Jharkhand.
- Android   React Native   Java

Contextual Sentiment Analyzer
Natural Language Processing

GoodBoy - Discord Bot [LINK]
- Developed a **Discord bot** that contextually reacts to the emotions depicted in the messages by using a customized **RoBERTa-based NLP Model**, a **multi-class emotion analyzer** that analyses the messages in real time.
- Publishes an adorable GIF in real-time based on the sentiment of the conversation!
- Python   Discord   Transformers   SciPy   BERT

Friendship Manager
Data Structures and Algorithms

Amigos Friend Network [LINK]
- Created an inventive **friend recommendation system** for students based on **compatibility score-based heuristics**.
- Devised a token system by **optimizing database using AVL Trees, Heaps, and Hash Tables**.
- Displays an interactive graph of the friendship network!
- C   Graphviz