PRAGUNA MANVI | RESUME

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SUMMARY

I have a strong passion for coding, algorithm design, and creating solutions that address pressing problems. During my **MS by Research** program at IIIT Hyderabad, I focused on theoretical research problems in computer vision and cryptography.

EXPERIENCE

SENIOR SDE   6/2023 - 10/2023
MAI Labs   Remote

Startup at **IIITH-CIE**: I worked as the team lead for a real-time analytics team focused on blockchain transactions. During my brief tenure, my responsibilities encompassed flagging suspicious activities, maintaining an event-driven pipeline, managing data stores, tracking relevant metrics, and visualizing transaction data to provide valuable insights.

INTERN-HABANA AI   8/2022 - 3/2023
Intel   Bangalore

During this internship, contributed to Habana Pytorch's software stack for enabling eager mode Deep learning training and inference on Habana's accelerators. The role included rewriting custom torch-ops to the graph compiler's frontend, where a few core tensor operators were implemented and added to the custom torch plugin. Along with the torch-ops, a few composite kernels and visualization-debug tools for the compiled torch-graph were developed.

LAB R&D PROJECT   8/2022 - 7/2023
IIITH   Hyderabad

Developed and presented an R&D project as part of lab work to **UIDAI**, focusing on a privacy-preserving authentication protocol. The project encompassed various aspects, including the implementation of a secure verification protocol, optimization strategies, and the creation of both server-side and client-side software components.

SOFTWARE ENGINEER   2/2020 - 10/2021
Dailyhunt   Bangalore

Developed highly scalable systems (> 10k rps), which includes :

- MDM system (Master Data Management) an efficient distributed caching+storage system for managing entire metadata and hashtags for the Dailyhunt Platform.

- Notification System, a distributed concurrent fan-in,fan-out system that collects and notifies based on the activities and preferences of millions of daily active users.

- Group service system, a high-load distributed backend system that manages all social user group metadata, activities, updates, and permissions.

- User Feed System, a scalable distributed fan-in,fan-out backend system that generates customized feed based on user activities.

Developed for promotional programs, which includes:

- Referral System, which rewards users who participate and join the platform and a Vaccination notification system (developed during Covid), to help users find nearby vaccine availability based on their location.

OTHER EXPERIENCES

Riversand - AI Intern, SintecMedia - Engineering Summer Intern

Riversand - Designed and developed an unsupervised model for Automated product cataloging and recommendation. **SintecMedia** - Developed an Angular application for tracking cloud usage and worked on a Java code generation project for standard model classes.

EDUCATION

IIIT HYDERABAD
MS by Research

9/2021 - 11/2023

Graduate Research Assistant at the Center for Visual Information Technology (CVIT) under Prof. Anoop Namboodiri. The research work has been predominantly in Vision, Deep learning, Cryptography, Biometrics, and Template Protection Systems with a course CGPA of **9.0**. Depth Courses pertaining to research :

- Computer Vision

- Advanced NLP

- Topics in Deep Learning

- Introduction to Neural and Congnitive Modeling

- Statistical Methods in AI

- Independent Study – Privacy Preserving Deep Learning

B.M.S COLLEGE OF ENGINEERING
B.E

8/2016 - 8/2020

Graduated in Computer Science and Engineering with **9.42** CGPA.

SKILLS

DEEPLEARNING LIBRARIES	Pytorch | Tensorflow | Keras
PROGRAMMING LANGUAGE	Python | Java | C++ | Kotlin | GoLang | JavaScript
BACKEND FRAMEWORKS	ktor | spring-boot | gin | express | fast-api
FRONTEND FRAMEWORKS	React | Angular
LANGUAGES	English | Kannada | Hindi

HONORS & AWARDS

- **Finalist of India Police Hackathon 2019:** Face Recognition App to detect missing individuals on the private police database.

- **Runner up in Intel's HyperLedger Hackathon 2019**: Securing Medical Records using Blockchain.

PROJECTS

A selected list of personal projects from this public repo:

- **BlockChain Voting Application :** Python based client and backend on sawtooth hyperledger framework.

- **Strive :** LeetCode style, Angular and express based online coding platform.

- **Secure Medical Record Application :** A project aimed at creating SecureMedicalRecords using sawtooth, nodejs and mongoDb.

- **AI Puzzels:** Visualization tool for classical AI problems.

- **User Authentication Solution**: Designed and implemented a prototype of an efficient privacy-preserving user verification system for **IIITH**, which attempts to enable remote biometrics to Indian masses—adapted vision and cryptography algorithms for the same.

Publications & patents

- Presented "SIAN: Secure Iris Authentication Using Noise" at IJCB (International Joint Conference on Biometrics) 2022 - proposed a novel cryptography theory with provable information-theoretic security and a computationally efficient computer vision application for secure verification.

- Provisional Patent Filed titled, "SYSTEM AND METHOD FOR AUTHENTICATING AN IRIS OF A USER USING BIOMETRIC NOISE". U.S patent pending.

- The second work titled, "S-BAN: Secure Biometric Authentication using Noise," accepted in ICVGIP 2023, an extension of the previous paper with additional novel algorithmic utilities and a deep learning architecture design for all biometric modalities.