Aryaman Prakash

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Education

Ramaiah Institute of Technology, Bangalore *GPA: 8.71/10*
B.E. in Computer Science and Engineering (Cybersecurity) *Dec 2022 – May 2026*

Experience

IISc (Indian Institute of Science) *Sept 2024 – Nov 2024*
Research Intern
- Developed and implemented path planning algorithms for a 3D laser printer to optimize printing efficiency. Utilized **PythonSLM library** to simulate and generate paths for STL slices of complex CAD geometries. Improved slicing process, reducing laser time by **15%** through optimized path coverage.

SAP Labs *Feb 2024 – May 2024*
Student Web Developer
- Developed and deployed a registration portal for a nationwide hackathon with **zero downtime** during a 3-week event. Supported over **10,000 concurrent users**, ensuring a seamless registration experience. Achieved high engagement with over **250,000 visitors** and **20,000+ registrations.**

HomeCloudHQ *Jan 2025 - Current*
Founding Member
- Co-founded HomeCloudHQ, driving the early-stage development of HomeCloud, a self-hosted cloud platform with **AWS-like** capabilities. Currently shaping the roadmap, design, and community-building efforts for this evolving project.

Selected Projects

Deep Learning based OCR for Product Metric Analysis ↗
- Designed a Deep Learning based pipeline to detect and extract key product quantities (e.g., weight, volume, count) from product image data with high accuracy for **Amazon ML challenge** .Executed Data pre-processing, feature engineering and model training with optimization techniques to improve performance.Tools Used: EasyOCR, Python, Regex, OpenCV.

Video generation for Web Map Services ↗
- Developed a Python-based AI solution utilizing **DAIN** for frame interpolation, **FFmpeg** for video generation, and alpha blending for smooth transitions, enabling continuous video production from satellite imagery with interactive visualization.

Secure Authentication framework with rate limiting ↗
- Developed SecureAuth, a modular C++ application using **OpenSSL** for SHA-256 password hashing with integrated rate limiting to defend against brute-force attacks, featuring an interactive CLI and cross-platform support.

AI Based Video Stabilization ↗
- Created and implemented an AI based frame filling and frame extending for video stabilization, thus reducing the data lost in regular video stabilization methods.

OA Cheating detection ↗
- Developing an AI-driven cheating detection system that integrates Judge0 for code evaluation,GeminAI API to embed hidden text for LLM detection and tokenization for leetcode style interviews. Avoid continuous face monitoring and adapt questions based on each student's response patterns.(in progress)

Technical skills

Languages: C++, C, Python, MATLAB, Go-Lang, Bash, SQL, Java, HTML, CSS
Frameworks MySQL, Git, Linux, Docker, Pandas, Sci-kit Learn, Tensorflow, Postman, PySpark
Relevant Coursework Algorithms, Data Structures, Operating Systems, Big Data Analytics, Database, OOPs, Cryptography

Achievements

- Achieved a contest rating of **1631**, placed among the top 18% competitors globally and solved **800+ DSA questions** on **Leetcode.**
- Ranked **483rd** out of **75,000+ participants** in the **Amazon ML Challenge** by developing a Deep Learning based pipeline for image detection, feature extraction and product quantities analysis from images.

Leadership and Extra-Curricular

- **Founding member, SecuRIT** , SecuRIT is the cyber security and open-source club of the college. Conducted national level hackathons,CTFs and cyber-security webinars for **200+ members** and online awareness for school children.

- Competed in several hackathons, achieving college finalist status in SIH and IIT competitions.