Aryaman Prakash

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Education

Ramaiah Institute of Technology, Bangalore   *GPA: 8.5/10*
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.**

Selected Projects

Shadowhashnet   ⧉

- Master-Slave application that uses a botnet to harness the compute resources available in a network. Creates a huge dataset of passwords and their hashes in **MD5, SHA1, SHA256, NTLM (MD4)** algorithms.
- Generated rainbow table of over **20,000,000+** in less than **2** hours with **5** active bots. A search-engine functionality to find passwords associated to a substring in the rainbow table, using redis to cache data retreival.

Privacy first P2P filesharing Torrent Network   ⧉

- Developed a decentralized, privacy first peer to peer file sharing network that uses a DHT based architecture for peer discovery, chunk level encryption for secure data transmission and metadata obfuscation techniques to replicate a more secure torrent network while maintaining anonymity.

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.

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.

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.

Technical skills

Languages: C++, C, Python, Go-Lang, Bash, SQL, Java, HTML, CSS
Frameworks: MySQL, Git, Linux, Insomnia/PostmanDocker, Pandas, Sci-kit Learn, Tensorflow, PySpark, FastAPI, Redis
Relevant Coursework: Algorithms, Data Structures, Operating System, Big Data Analytics, Database, OOPs, Cryptography

Achievements

- Achieved a contest rating of **1631** and solved **1000+ 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.