

# Aryaman Prakash

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## Education

**Ramaiah Institute of Technology, Bangalore**  
*BE in Computer Science and Engineering*

*GPA: 8.71/10*  
*Dec 2022 – May 2026*

## Experience

### IISc (Indian Institute of Science)

*Research Intern*

*Bangalore, BLR*  
*Sept 2024 – Nov 2024*

- Developed and implemented path planning algorithms for a 3D laser printer to optimize printing efficiency. Utilized **PySLM 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

*Student Web developer*

*Bangalore, BLR*  
*Feb 2024 – May 2024*

- 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

### 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, Pillow.

### MyShell: A Custom Command Line Shell Implementation



- Developed a custom linux shell using C and C++, supporting core functionalities like process management, file operations, and permission handling with system calls such as **fork()**, **exec()**, and **wait()**.
- Applied command parsing, built-in commands and error handling, providing a fully functional alternative to standard terminal operations.

### Password Cracker Toolkit



- Developed a password cracking toolkit by integrating CUPP with Hydra, automating password generation and brute-force attacks using Python and Shell scripting with Bash and Awk.

### 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, LaTeX, MATLAB, Bash, SQL, Java, HTML, CSS

**Frameworks** MySQL, Git, Linux, Docker, Pandas, Sci-kit Learn, Tensorflow

**Relevant Coursework** Algorithms, Data Structures, Operating Systems, Database, OOPs, Cryptography

## Achievements

- Achieved a contest rating of **1631**, placed among the top 18% competitors globally and solved **600+ 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 only cyber security and open-source club of the college. Conducted national level hackathons, cyber-security webinars for **200+ members** and online awareness for school children.
- Central Defender, Artisec FC**, As part of the department football team, I reached the quarter finals of the annual RFL football league in 2023.