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### Internships

# •Indian Institute of Technology Guwahati

Research Intern - Dept. of CSE (MARS Lab)

May 2023 – July 2023 North Guwahati, Assam

- Accelerated DNN inference on Network-on-Chip (NoC) architectures using Timeloop, C++, and Python. Focused on AI hardware-software co-design and simulation.
- Achieved 23% latency reduction through optimized data mapping and efficient memory scheduling.
- Built and validated NoC simulation models to test various DNN workloads under different network topologies.
- Contributed to academic research on AI accelerator design and architectural performance analysis.

#### •Growth Purple

Mentee (ML Engineering)

June 2023 – October 2023 Hyderabad, Telangana

- Gained hands-on experience in building a PDF chatbot using LLMs, Streamlit, and LangChain for real-time document interaction.
- Improved understanding of **RAG implementation** for enhanced context retrieval in AI applications.
- Developed practical skills in **model integration and deployment** within a professional ML environment.
- Collaborated closely with senior ML engineers, learning best practices in **AI project management** and development workflows.

### TECHNICAL SKILLS

**Programming Languages:** Python, C++, Rust

Cloud & DevOps: Docker, Git, AWS (S3, Beanstalk), Google Cloud Platform (GCP)

Database Technologies: SQLite

Data Science & Machine Learning: PyTorch, NumPy, Pandas, Matplotlib, Scikit-learn

Frontend Development: Flet, Streamlit, HTML, TailwindCSS, React

Backend Development: FastAPI, Flask

Soft Skills: Problem Solving, Time Management, Team Collaboration, Communication

Interests & Hobbies: Linux, Cloud Computing, Artificial Intelligence, Karate, Reading, Video Games

### **PROJECTS**

### •Big Defend

Jan 2025 - Ongoing

An open source real-time cybersecurity incident response system using Big Data.

- Tools & technologies used: NumPy, Nmap, Requests, Scapy, Scikit-learn
- Developed a real-time cyber security incident response system leveraging Big Data technologies for efficient detection and analysis of security threats.

# •CHIP-8 Emulator

June 2024 - July 2024

A CHIP-8 emulator in C++

- Tools & technologies used: C++, SDL2, Low-Level Programming, Emulation
- Built a CHIP-8 emulator in C++ to replicate the functionality of the classic 1970s-era CHIP-8 virtual machine, accurately
  executing original CHIP-8 programs and games.

### •PaperWise

June 2023 - Sept 2023

 $Engineered\ an\ intelligent\ PDF\ assistant.$ 

- Tools & technologies used: PySide<br/>6, Ollama, Langchain, Hugging Face API, Gemini
- Engineered an intelligent PDF assistant using PySide6, Ollama, and PyMuPDF for seamless document interaction, smart Q&A, and offline AI processing.

#### •Smart Parking & Toll Management System

Sept 2023 - Nov 2023

Engineered an automated system using IoT components, RFID sensors, and real-time data processing.

- Tools & technologies used: Vega Aries v3.0, ESP8266, RFID, C/C++, Firebase
- Engineered an automated system with IoT components and RFID sensors for smart parking and toll management, incorporating real-time data processing to optimize vehicle flow.

# **CERTIFICATIONS**

•Summer School on AI Technologies UUST, Russia	2024
•AWS Cloud Architect AWS Academy Graduate	2024
•Introduction To Internet of Things NPTEL	2023
•Google IT Automation with Python Coursera	2024
•NDG Linux Unhatched Cisco NetAcad	2023
•Vega Processor Ecosystem C-DAC, IEEE India Council	2023

# **PUBLICATIONS**

•A Cloud-Based Telemedicine Platform: Enhancing Healthcare Accessibility through Technology

Dec~2024

International Conference on Progressive Innovations in Intelligent Systems and Data Science Published by IEEE Computer Society on IEEE Xplore

•Efficient Parking & Toll Management: A RFID-Enabled Approach with Vega Aries Development Board Nov 2023
International Journal of Innovative Science and Research Technology

Volume 8, Issue 11

# EDUCATION

•Bachelor of Engineering in Computer Science

2021 - 2025

Chandigarh University, Mohali

CGPA: 7.76

Relevant Coursework:

Core Computer Science: Algorithms, Data Structures, Computer Architecture, Operating Systems

Data & Analytics: Big Data Analytics, Data Visualization, DBMS

AI & Networks: Machine Learning, Computer Vision, Computer Networks

•Intermediate (Non-Medical)

2020 - 2021

Darshan Academy, Ludhiana (CBSE)

Percentage: 81.4%

•Matriculation

2018 - 2019

Darshan Academy, Ludhiana (CBSE)

Percentage: 83.6%