ARYAM JUNEJA

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Experience

iHub-AWaDH @ IIT Ropar   **June 2024 – July 2024**
Summer Intern   *Ropar, Punjab*

- Engineered and refined firmware for Nordic nRF microcontrollers, emphasizing low-power BLE and sensor integration via RS485 and Modbus protocols
- Conducting rigorous testing and debugging while collaborating with a multidisciplinary team to innovate IoT devices to enhance agricultural productivity and water management.

Experiential Learning Center, Thapar University   **June 2023 – July 2023**
Summer Intern   *Patiala, Punjab*

- Co-developed a personal-cloud system for data collection and management of IoT devices
- Built a Flask-based web API for Linux file management, including smart upload logic

Education

Thapar University   **Oct. 2021 – June 2025**
Bachelor of Engineering in Electronics and Computers | **CGPA** *8.44*   *Patiala, Punjab*

Projects

Reddit Sentiment Analysis | *Python, Data Science, Machine Learning, NLP*

- Analyzed sentiment in r/IsraelPalestine Reddit for 10,000 comments, comparing SVM, Logistic Regression, Decision Tree, and Random Forest models
- Used praw for data collection, TextBlob for polarity, Count Vectorization for encoding, and visualized results with bar graphs, word clouds, and confusion matrices

WiFi-MESH Swarm Network | *Firmware Development, C, IoT, Swarm Technology, WiFi-Mesh*   **Jan. 2024 – Present**

- Developing a communication infrastructure for swarm networks using ESP32 with WiFi-Mesh, organized in a tree topology.
- Leveraging Received Signal Strength Index (RSSI) to estimate distance and adjust the swarm network by dynamically electing parent nodes and ensuring optimal area coverage.

Technical Skills

Languages: Assembly, Java, Python, C/C++, SQL, HTML, CSS, MATLAB, SQL
Developer Tools: Linux, Git, AWS, Flask and AutoCad, Docker
Techniques: Software Development, Firmware Development, Data Structures & Algorithms, IoT, Data Science, Artificial Intelligence, Machine Learning, Cloud Computing, Database Management Systems, Computer Architecture

Leadership / Extracurricular

Team Leader, Flipkart Grid 6.0 (Top 1%)   **Sept 2024 – Dec 2024**

- Led a team of 3 for Flipkart Grid 6.0 Hackathon, this project achieved a top 1% position, showcasing innovation and technical excellence
- Trained a CNN model using TensorFlow on 5000 images for Freshness Index calculation, and used YOLOv8n and EasyOCR on 5000 and 9000 images for Brand and Expiry Date extraction
- Led the team to deploy the solution on Google Cloud using Docker, ensuring scalability, portability, and seamless remote usability

Finance Secretary, Thapar Amateur Astronomers Society (T.A.A.S)   **June 2023 – June 2024**

- Led a team of 100+ members in the Astronomy Society, overseeing the successful execution of educational events and projects, including workshops and outreach programs, while driving strategic decisions to increase member participation and enhance learning experiences
- Directed the management of a 2+ lakh budget for society events celebrating Astronomy and Space Exploration, ensuring efficient resource utilization and creating memorable, high-impact experiences

State Athlete, Swimming (Punjab)   **June 2019 – Dec. 2019**

- Achieved 1st rank in Amritsar open district swimming tournament for 3 categories: 50-meter butterfly, 50-meter backstroke, and 400-meter medley relay
- Secured 2nd rank in Punjab state swimming tournament for 400-meter medley relay category and 2nd rank in Hansraj tournament for 3 categories: 400-meter backstroke, 50-meter, and 100-meter butterfly