

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 Centre, Thapar University

June 2023 – July 2023

ELC 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

Capstone Project | 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.

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

Pong Game Clone | Java, AI, Game Development

- Developed a Java-based Pong Game Clone with an AI player for single-player mode
- Integrated innovative gameplay elements like dynamic ball physics, customizable paddle designs, or a challenging tournament mode

Freshness Index Predictor | Python, Deep Learning, Computer Vision, TensorFlow and Keras

- Engineered a unique CNN-based model in TensorFlow to classify fruit and vegetable freshness, incorporating a confidence score to predict an accurate freshness index.
- Deployed the model for dynamic, real-time freshness assessment on live video streams.

Technical Skills

Languages: Assembly, Java, Python, C/C++, SQL, HTML, CSS, MATLAB, SQL

Developer Tools: Linux, Git, AWS, Flask and AutoCad, Tanner S-edit

Techniques: Software Development, Firmware Development, Data Structures & Algorithms, IoT, Application Development, Data Science, Artificial intelligence, Machine Learning, Cloud Computing, Database Management Systems, Computer Architecture

Leadership / Extracurricular

Thapar Amateur Astronomers Society (T.A.A.S)

June 2023 – Present

Executive Member

Thapar University

- Managed a budget of more than Rs.1 lakh for society events focused on Astronomy and Space exploration
- Organized 7 educative sessions and facilitated sky-watching through telescope for more than 20,000 school and college students over the tenure

Swimming

June 2019 – Dec. 2019

State Athlete

Punjab

- 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