

Antonio Roger

GitHub | antonioroger.dop@gmail.com | Portfolio | LinkedIn

Aspiring AI student passionate about problem-solving, innovation, and applying AI technologies to build impactful solutions. Experienced in AI-driven, enthusiastic about continuous learning and creative problem-solving.

EDUCATION

B.Tech in Computer Science (AI) Amrita Vishwa Vidyapeetham , Coimbatore	2023 – Present
---	-----------------------

SKILLS

- **Programming Languages:** C, Python, C++(Basics)
- **Web-development Frameworks:** MERN Stack (MongoDB, Express, React, Node.js), Flutter
- **Machine Learning & Tools:** PyTorch, DGL, Scikit-learn, OpenCV, TensorFlow
- **Embedded Systems & IoT:** Arduino, NodeMCU, Raspberry Pi, ESP32
- **Databases & Cloud:** MongoDB, Firebase, MySQL
- **Version Control & DevOps:** Git, GitHub, Vercel deployment

EXPERIENCE

App Development Lead – Intel IoT Club, Amrita <i>Web & App Developer</i> - Contributed to multiple club projects, leading the App Development vertical and serving as Tech Head for a NASSCOM incubated student startup through club initiative.	Jun 2024 – Present
Web & Technical Expert – TEDx Amrita University Chapter	Jan 2025 – Present
Photographer – Team Media, Amrita	Sep 2023 – Present

WORKSHOPS & CERTIFICATIONS

DATA STRUCTURES AND ALGORITHMS WITH JAVA NPTEL	Aug 2025 – Nov 2025
TDEP: Drones & Industrial Robots PSG College of Technology	Jun 2024 – Jul 2024
Embedded Electronics: Sensor-MCU Integration for IoT Applications	Apr 2024 – May 2024

ACADEMIC PROJECTS

- **Cardiovascular Disease Prediction using PPG-GAN** [GitHub]
 - Designed an end-to-end deep learning platform for cardiovascular risk assessment using Photoplethysmography (PPG) signals.
 - Leveraged GANs for ECG signal enhancement and feature augmentation, improving predictive robustness.
 - Integrated model inference with a web-based health monitoring dashboard.
- **Conformer-Based Automatic Speech Recognition (ASR)** [GitHub]
 - Implemented state-of-the-art Conformer architecture in PyTorch for end-to-end ASR on LibriSpeech.
 - Built a 12-layer encoder combining multi-head self-attention and depthwise separable convolutions.
 - Optimized training using CTC loss, Automatic Mixed Precision (AMP), and OneCycleLR scheduling.

- **Music Generation using RNN-LSTM** [GitHub]
 - Built a sequence-to-sequence model using RNN and LSTM to generate MIDI-based musical compositions.
 - Trained on symbolic music data to learn temporal patterns and composer-style representations.
- **TCP-Based IP Video Call System**
 - Implemented real-time peer-to-peer video communication using socket programming over TCP/IP.
 - Enabled live video streaming with synchronized frame transmission and reception.
- **Virtual Mouse Control using Computer Vision**
 - Designed a gesture-controlled virtual mouse system using OpenCV and ESP32-CAM.
 - Facilitated human-computer interaction through real-time hand landmark detection.
- **Robotics – Two-Wheeled Self-Balancing Bot (TWSB)** [GitHub]
 - Engineered a self-balancing robot using PID control for dynamic stability and autonomous navigation.
 - Integrated sensor fusion and path planning algorithms for real-time motion control.

ACHIEVEMENTS

Runner-Up, Cisco Cohort7 Hackathon

April 2025

Ranked among the top 20 out of 1,600 teams, securing a runner-up position, earning exclusive incubation from Cisco's NASSCOM Foundation with support from the Intel IoT Club, and placing in the top 1% of participants.