Anmol Govindarajapuram Krishnan

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⚙ github.com/Anmol-G-K

Summary — A driven Electrical and Electronics Engineering student passionate about solving challenges in power electronics, embedded systems, and robotics. My core interest lies in developing high-efficiency power converters and high-performance embedded/FPGA architectures for applications in space technology, EV infrastructure, and intelligent systems. I have practical experience in system design, demonstrated by projects such as a gesture-controlled robotic arm and an automated electronic component sorter. I am eager to apply my skills through research opportunities or industry roles in power, embedded, or semiconductor design.

Education

Amrita School of Engineering — **Coimbatore, Aug 2023 – Present**
Bachelor of Technology, Electrical & Electronics Engineering — *CGPA: 9.4 / 10.0*

Suguna Pip School — **Coimbatore, 2022 – 2023**
High School Diploma — *Percentage: 93%*

Suguna Pip School — **Coimbatore, 2020 – 2021**
Secondary School Certificate — *Percentage: 92%*

Positions Held

IEEE Student Branch, Amrita School of Engineering, Coimbatore — **Aug 2025 – Present**
Treasurer

- Facilitated the organisation of technical events
- Led volunteer teams, coordinating logistics and support for IEEE events

Intel IoRT Club — **Jul 2024 – Jun 2025**
Multi-Disciplinary Engineer & Team Lead

- Progressed through several key roles, including IoRT Lead, Project Lead, Power Electronics Lead, Engineer, and Trainee
- Spearheaded project planning and team leadership across IoRT (Internet of Robotic Things) and Power Electronics sub-divisions
- Designed, simulated, and implemented PCBs for embedded systems using EasyEDA, Proteus, and LTSpice
- Developed and optimised control systems for power electronics
- Co-organised a technical workshop on ESP-NOW, an IoT communication framework

Amrita Racing Team — **Jan 2024 – Oct 2024**
Student Trainee

- Contributed as a member of the electric subsystem team, focusing on core electronic systems
- Gained hands-on experience in PCB design and electrical wiring for the racing vehicle

Projects

Bidirectional DC-DC Converter for Solar Battery Charging ⚙ — **2025**
github.com/Anmol-G-K/bidirectional-dcdc-solar

- Designed and simulated a 4-switch bidirectional buck-boost DC-DC converter in MATLAB-Simulink for efficient power transfer between a PV source and a 12V battery.
- Integrated Maximum Power Point Tracking (MPPT) and PID-based voltage regulation to maximise energy utilisation under variable solar conditions.
- Validated the design through simulation, achieving up to 83% efficiency and demonstrating smooth mode transitions (buck, boost, and buck-boost).
- **Technologies Used:** MATLAB, Simulink, Power Electronics, Control Systems, STM32

CAN Bus Intrusion Detection System (1st Place Winner, IEEE EV Hackathon) ⚙ — **2025**
github.com/Anmol-G-K/IEEE-EV-Hackathon

- Developed a machine learning framework to detect cyber attacks in automotive CAN bus networks
- Engineered a comprehensive data processing and feature extraction pipeline for the "Car Hacking Challenge 2020" dataset with over 8 million CAN messages.
- The final system incorporated an interactive Streamlit-based dashboard facilitating real-time analysis, comprehensive model evaluation, and visualization of intrusion detection outcomes.
- **Technologies Used:** Python, PyTorch, Scikit-learn, XGBoost, Streamlit, Polars

Autonomous Drone Navigation System (MathWorks Mini Drone Competition) ⟳   **2025**

github.com/Anmol-G-K/Team-AeroAmps-MiniDrone

- Developed flight control algorithms for autonomous drone navigation using MATLAB and Simulink
- Engineered and simulated both linear and non-linear drone dynamics to create robust and precise control systems.
- Contributed to a modular software architecture, designing core components.
- **Technologies Used:** MATLAB, Simulink, Stateflow, Aerospace Blockset

Gesture-Controlled Robotic Arm — Mudra MK-I (IoRT Division) ⟳   **Feb 2025 – May 2025**

github.com/Robo-Linkers/Gesture-controlled-robotic-arm

- Spearheaded the complete project lifecycle for a 3-DOF gesture-controlled robotic arm, leading the team from conceptualisation to final demonstration.
- Directed the technical strategy, overseeing the custom Printed Circuit Board (PCB) development and the design of the power electronics subsystem.
- Implemented an MPU6050 sensor for intuitive, real-time motion tracking, translating hand gestures into precise robotic arm control.
- Successfully managed the project timeline and team deliverables, resulting in project completion and successful demonstration 12 days ahead of schedule.
- **Technologies Used:** C++ (Arduino), Custom PCB Design (EasyEDA), MPU6050 Accelerometer, Power Electronics and Embedded Systems

Electronic Component Sorter (Intel AI Hackathon Top 100 Finish) ⟳   **2023**

github.com/Vanguard-s/Electronic-Component-Sorter

- Led the development of a machine learning classifier to automate the identification of 7 major electronic components (resistors, capacitors, and ICs).
- Designed and trained a deep learning model using TensorFlow, Keras, and OpenCV, significantly improving classification accuracy through iterative model refinement.
- Achieved recognition as one of the top 100 teams by advancing to Round 2 of the Intel oneAPI AI Hackathon.
- **Technologies Used:** Python, TensorFlow, Keras, OpenCV, Deep Learning

Skills

Languages	C++, Python, C, MATLAB, Embedded C	**PCB/EDA**	Altium Designer, KiCad, EasyEDA, Fusion360
Simulation	MATLAB/Simulink, LTSpice, QSpice, Proteus	**Hardware**	STM32, ESP Series, Raspberry Pi, Arduino, Microchip PIC

Certifications

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- Simulating PWM Strategies for Power Converters with QSPICE, *Udemy* (2025) ↗
- Simulating DC-DC converters with QSPICE, *Udemy* (2025) ↗
- STM32G474 microcontroller for power electronics applications, *Udemy* (2025) ↗
- Mastering Microcontroller and Embedded Driver Development, *Udemy* (2025) ↗
- Application-Driven Electronics & IoT, *IIT Madras* (2025) ↗
- Learn Python Programming Masterclass, *Udemy* (2024) ↗
- Introduction and Programming with IoT Boards, *Coursera* (2024) ↗