DEEPAMALA CHOCKALINGAM

Junior PCB Design Engineer

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PROFESSIONAL SUMMARY

Electronics hardware engineer with 2 years of experience in embedded systems and PCB prototyping. Completed professional training in PCB design using Altium Designer, covering schematic capture, multi-layer layout, component library creation, and manufacturing file generation. Seeking Junior PCB Designer or Hardware Engineer role in electronics product development.

TECHNICAL SKILLS

- **PCB Design:** Altium Designer (Schematic, Layout, Libraries, DRC/ERC, Gerber/BOM) • 2-Layer & 4-Layer Boards • Component Placement • Routing • Power Distribution • Decoupling • Ground Planes • Trace Width Calculation • DFM
- **Embedded Systems:** Arduino, ESP32, ESP8266 • Sensors (Temperature, Proximity, Motion) • Motor/Servo Control • UART, I2C, SPI
- **Hardware Development:** Circuit Prototyping • Breadboard Testing • Multimeter/Oscilloscope • Debugging • Component Selection

PCB DESIGN PROJECTS

Microcontroller Development Board *(Altium Designer - Academic Project)*

- Designed 2-layer PCB with ATmega328P, USB-to-serial interface, 5V/3.3V regulation (LM1117), ICSP programming header, and sensor ports
- Implemented ground plane, strategic decoupling (100nF + 10µF near ICs), and optimized layout for signal integrity
- Created custom footprints/symbols, performed DRC/ERC validation, generated Gerber, NC Drill, BOM, and Pick-and-Place files

Multi-Sensor Interface Module *(Altium Designer - Training Project)*

- Designed PCB for analog (temperature, gas) and digital (motion, proximity) sensor interfacing with ADC and I2C communication
- Implemented analog/digital ground separation, RC filtering, I2C pull-ups, and screw terminals for external connections
- Built Altium component library from datasheets (15+ components) with footprints, 3D models, and parametric data

PROFESSIONAL EXPERIENCE

Research Associate *Feb 2024 – Sep 2024*
Kalam Institute for Technical Education, Chennai

- Developed embedded prototypes integrating Arduino/ESP32 with sensors (DHT22, ultrasonic, IR) and actuators (motors, servos, relays) for robotics projects
- Performed hardware debugging with multimeter and logic analyzer, achieving 90%+ prototype success rate
- Created breadboard prototypes and documented schematics, specifications, and test procedures for 8+ projects

Junior Research Analyst *Jul 2023 – Feb 2024*
Cyberbots Robo Technologies, Chennai

- Designed prototype circuits for automation including motor drivers, sensor interfaces, and ESP8266 wireless modules
- Performed component selection via datasheet analysis for 12+ prototypes considering voltage, current, temperature, and cost
- Integrated sensors (ultrasonic, line-following, accelerometer) and motors with microcontrollers, writing embedded C for testing

EDUCATION

B.E. Electronics & Communication Engineering *CGPA: 8.11/10*
Anna University – MNM Jain Engineering College, Chennai 2019 – 2023
Coursework: Electronic Circuit Design, Analog & Digital Electronics, Microprocessors, PCB Design & Fabrication, Embedded Systems

CERTIFICATIONS

- **Diploma in PCB Designing (Altium Designer)** – Ecareerpluz (2024) – Schematic design, layout, design rules, manufacturing files
- **Robotics and Artificial Intelligence** – Great Learning Academy (2023)