Sandip Patil

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SUMMARY

Highly skilled, Technically minded and Resourceful **Electrical Engineering** individual with strong fundamentals in the field of **Electronics**/**Embedded Hardware/Software**. Actively seeking **Full-time** to utilize my skills.

- Comprehensive knowledge of **PCB standards**, **Electronic circuit boards,** and **Manufacturing principles**.
- In-depth knowledge of the design concepts and safety standards of **PCB**.
- Experience and Knowledge with **Developing**, **Debugging**, **Testing**, **Troubleshooting** of the electronics system.

EDUCATION

Master of Science: Electrical and Computer Engineering, Wayne State University, USA (**GPA-3.48/4.0)** **Dec 2019**
Bachelor of Engineering: Instrumentation and Control, North Maharashtra University, Jalgaon, India **May 2016**

SKILLS

- **Programming languages**: Embedded C, C, MATLAB, Python.
- **Protocols**: CAN, LIN, Bluetooth, I2C, SPI, UART, TCP/IP, UDP.
- **Software Tools**: AutoCAD, Ki-CAD, MATLAB/Simulink, ALTIUM designer, Keil, Visual Studio.
- **Microcontrollers**: Atmega328, MCS-51.
- **Others**: PCB Design, Schematic, Soldering, PCB Troubleshooting, Multimeter, Oscilloscope, Pulse Generator, Microsoft Office (word, excel, and pp).
- **OS**: Windows, Linux, Mac.

WORK EXPERIENCE

Electronic Design Engineer, Spectrum Techniques LLC, Tennessee, USA **July 2020 to Present**
- Designing multi-layer **PCB** for **Single Channel Analyzer** in **Altium** Designer.
- **Debugging** and **Software Testing** of radiation counter prototype.
- **Troubleshooting**, **Failure Analysis**, **Testing**, **Soldering**, **Desoldering** Printed Circuit Boards (PCB).
- Modification and Validation in **Firmware** and **PCB** design of previous radiation counters.

Embedded Systems and Control Intern, Airspace Experience Technologies, Detroit, USA **Sept 2019 to Dec 2019**
- **MATLAB** scripting for calculating battery parameters as per vehicle requirements.
- Calibration of **Pixhawk**, Configuration of **Motors**. Testing **PX4** Firmware Software.
- Developing communication between Motor and Battery by **CAN** protocol and documentation were involved.

Electronics and Instrumentation Engineer, Algorithmic Electronics, Pvt. Ltd., Pune, India **July 2016 to Nov 2017**
- Worked in team to **Develop**, **Debug** and **Test** Industrial robots, Home Automation Projects.
- Programmed Projects in **Embedded C**. Worked with electronic **schematics**.
- Designed, Failure Analysis and Tested **Printed Circuit Board (PCB)**.
- Selection of components and **Troubleshooting** of hardware in an embedded environment.

ACADEMIC PROJECTS

Implementation of CAN based Autonomous Vehicle Monitoring and Control Applications. **Dec 2018**
- Interfaced **Arduino** and **CAN** module for Multi-node CAN based System.
- Interfaced and Programmed various sensors like **Ultrasonic**, **LDR**, **Pressure** sensor, **Rain** sensor, **Temperature** sensor and programmed using **C** in **Arduino (IDE).**
- Analyzed node communication using different types of **Actuators** at receiving node.
- Documented the results, prepared comprehensive report and delivered technical presentation.

Battery Management using Smart Cells and Embedded Microcontroller **Dec 2019**
- Simulation of battery management system in **Proteus**.
- Developed computerized interface system and interfaced **Arduino Uno** with **Sensors**, **LCD** module and **CAN** transceiver in order to monitor and control parameters of the **cells** for battery management.

Battery pack design and analysis of Nissan Leaf. **April 2019**
- Designed **battery pack** for Nissan Leaf EV.
- Analyzed **Battery management system** and **Thermal management system**.
- Calculated estimation of total **cost** for battery pack.

Digital filter design for Music sample by using MATLAB. **April 2018**
- Design and Implementation of digital filter to eliminate **Noise** signal from Corrupted **Music** signal using MATLAB**.**
- Used **FFT** algorithm in **MATLAB** to remove noise.