M.A. SHASHWAT

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EDUCATION

MANIPAL INSTITUTE OF TECHNOLOGY — **Manipal, Karnataka, India**
Bachelor of Technology, Major in Mechatronics, Minor in Electric Vehicle Technology — **Expected May 2024**
Cumulative GPA: 8.4/10

SKILLS & INTERESTS

Technical: MATLAB, Simulink, Simscape, Embedded Systems, Robotics Operating System, C language, Python, CAD.
Language: English (Native Proficiency), Tamil (Native Proficiency), Hindi (Professional Working Proficiency).

WORK EXPERIENCE

ROBERT BOSCH CENTER FOR CYBER-PHYSICAL SYSTEMS, IISC — **Bangalore, Karnataka, India**
Research Intern — **Jan 2024- June 2024**

- Working on Autonomous Drone Projects under the guidance of Professor Pushpak Jagtap at Formal Control and Autonomous Systems Lab at Indian Institute of Science.

OLA ELECTRIC — **Bangalore, Karnataka, India**
Vehicle Engineering Intern — **June 2023- Aug 2023**

- Conducted simulations of 2W and 4W models using Gamma Technology Software to assess regenerative braking performance using supercapacitors.
- Designed a flight controller that utilizes PID control algorithms and integrates an MPU-6050 sensor and motor electronic control unit, resulting in precise drone stabilization and control.

PROJECT AND RESEARCH EXPERIENCE

MOTO MANIPAL — **Manipal, Karnataka, India**
E-Powertrain Engineer — **Nov 2020 – May 2023**

- MotoManipal is Manipal Institute of Technology's Electric Superbike team which participates in various national and international competitions.
- Designed the high and low-voltage circuits and worked on the wiring harness of an electric superbike powered by a 10kw PMSM Motor. I also worked on calculating, designing, and manufacturing the lithium-ion battery pack.
- Developed an interactive dashboard using Python and RaspberryPi3 and collected data from the motor controller using CAN (Controller Area Network) through ESP32.
- Designed a data logging system for real-time performance monitoring and analysis.
- I worked on MATLAB and Simulink for powertrain modelling and range calculations.

BATTERY- SUPERCAPACITOR HYBRID SYSTEM RESEARCH — **Manipal, Karnataka, India**
Electronics and Energy Systems — **March 2021 – Feb 2023**

- Explored methods to enhance electric vehicle range and battery life by integrating supercapacitor with battery and reviewed Adaptive Fuzzy Logic Controller for energy management.
- Delivered a presentation titled "Investigation into the Performance of Battery Supercapacitor Hybrid Storage System" at the prestigious Interdisciplinary Conference on Healthcare and Technical Research (ICHTR) International Conference in November 2021.

ACADEMIC PROJECTS

Aqua-Culture Cooler Using DS18B20 Temperature Sensor — **EMBEDDED SYSTEMS AND RTOS**
Line Following Robot — **ROBOTICS OPERATING SYSTEM**
IIOT Watch with Pulse Measurement — **INTERNET OF THINGS**

LEADERSHIP & ACTIVITIES

Team Leader at MotoManipal: Emerged victorious in the Electric Bike Design Challenge organized by Mechatron Motors.
Secured third place in the National Online E-Bike Design Challenge - hosted by the Fraternity of Mechanical and Automotive Engineers
Active Member of Rotaract Club of Manipal: Organized blood donation camps and beach clean-up drives.
Sports Captain at New Horizon Public School: Demonstrated effective leadership skills in organizing and promoting various national and state-level sports activities and events and enhancing sports and fitness within the school community.
Captain and Team Member of the Karnataka State Basketball team in the U-16 and U-19 age category tournaments.
Freelance Graphic Designer: equipped with skills in Adobe Photoshop and Adobe Illustrator.