

# NIKHILESH KUSHWAHA

Prayagraj, Uttar Pradesh

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## EDUCATION

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**Rajiv Gandhi Institute Of petroleum Technology** **2022 – 2026**  
*B. Tech- Electrical Engineering (Major: E-Vehicles) - CPI - 5.54 (till 4th sem) Amethi, Uttar Pradesh, India*

**Little Flower House** **2020–2021**  
*CBSE Class 12 - Percentage - 80.4%* *Varanasi, Uttar Pradesh India*

**Kendriya Vidyalaya** **2018–2019**  
*CBSE Class 10th - Percentage - 90.4%* *Prayagraj, Uttar Pradesh, India*

## COURSEWORK

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- Sensors Actuators and Control for Electric Vehicles
- Network Analysis and Synthesis
- Electrical Machines
- Signals and Systems
- Digital Circuits and Systems
- Power Electronics
- Analog Circuits and Systems
- Control Systems

## PROJECTS

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**Traction Motor design** | **September, 2024 - Ongoing**

- Conducted research on different types of traction motors, including induction, permanent magnet, and synchronous motors. Induction motors are durable and cost-effective but less efficient. Permanent magnet motors offer high efficiency and compact design but can be expensive due to rare-earth materials. Synchronous motors provide excellent speed regulation and high efficiency, though they require complex control systems. Brushless DC motors are efficient and low-maintenance, while switched reluctance motors feature simple construction but can experience torque ripple. Each type has unique advantages and disadvantages, making the choice dependent on specific application needs.
- Developed mathematical models to simulate motor performance across various operating conditions, allowing for analysis of efficiency, torque, and speed characteristics. These models help predict how motors behave under different scenarios, providing valuable insights for optimizing performance in practical applications.
- By leveraging the capabilities of MATLAB and Simulink, we were able to create highly accurate models of the motor, simulate its behavior under different conditions, and identify potential design flaws. This iterative process allowed us to refine the motor's design for optimal performance and efficiency.
- To evaluate the performance of the designed motors, we conducted a thorough analysis of their torque-speed characteristics, efficiency, and thermal behavior. This analysis provided valuable insights into the motors' capabilities and limitations.

## TECHNICAL SKILLS

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**Languages:** Python, C

**Technologies/Frame works** Autocad, Matlab, Simulink, Verilog

## EXTRACURRICULAR

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**IEEE Student Branch, RGIPT**

• Member

**Powerlifting and Bodybuilding**

**Achievements**

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- Qualified for JEE Advance ,2022