SANJEEV SINGH

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EDUCATION

Rajiv Gandhi Institute of Petroleum Technology   **2022 - 2026**
*B.Tech - Electrical Engineering (Major : E-Vehicle) - **CPI - 7.97 (till 4th sem.)***   *Amethi, India*

S.T. Xavier's School   **2020 - 2021**
*CBSE Class 12th - **Percentage - 91.2***   *Ballia, Uttar Pradesh, India*

S.T. Xavier's School   **2018 - 2019**
*CBSE Class 10th - **Percentage - 83.6***   *Ballia, Uttar Pradesh, India*

PROJECTS

Modeling and Identification of DC-DC Buck Converter   **September, 2024 - ongoing**

- Developed a state-space model for DC-DC buck converter to analyze system dynamics and behavior. Designed and implemented PID and PWM control strategies for effective voltage regulation and system stability.
- Utilized system identification techniques to estimate key parameters, optimizing model accuracy and control performance.
- Executed MATLAB-Simulink simulations to validate model performance, leading to the identification of key inefficiencies; findings contributed directly to optimizing control strategies and improving overall system response time by 30 milliseconds.
- Performed hardware validation through real-time testing, ensuring robust and reliable converter operation under varying loads and input conditions.

Advanced Control Techniques for Highly Efficient Power Converters   **May, 2024**

- Implemented advanced PWM control algorithms to optimize switching performance, significantly enhancing power converter efficiency and reducing energy losses.
- Developed PWM strategies to dynamically adjust duty cycles, improving converter performance under varying load conditions and ensuring stable operation.
- Reduced harmonic distortion and electromagnetic interference through precise PWM signal modulation, improving system reliability and power quality.

COURSEWORK

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

TECHNICAL SKILLS

Languages: C, Python
Technologies/Frameworks: Matlab, Simulink, Verilog, Autocad
Libraries: Numpy, Pandas

ACHIEVEMENTS

- Qualified JEE Advanced - 2022