RAMTEJ PASELA

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OBJECTIVE

Electrical and Electronics Engineer with expertise in **Power Electronics Design, Cyber-Physical Digital Twins, and Renewable Energy Systems**. Demonstrated success in achieving **93%+ hardware efficiency** in **DC-DC converters**. Proficient in **MATLAB Simulink, PSIM, Arduino IDE, and IoT frameworks** to optimize **power systems and fault detection**. Looking for opportunities in **power electronics, power systems, and renewable energy** to drive **technological advancements and energy efficiency**.

SKILLS

Technical Skills:	Power Electronics Design, Control Systems, Renewable Energy Systems, Cyber-Physical Digital Twins, EV Powertrains, IoT-based Smart Grid Systems
Software & Tools:	MATLAB Simulink, PSIM, LTspice, Arduino IDE, Power World Simulator, ESP8266, Raspberry Pi, Putty, ThingSpeak
Soft Skills:	Technical Writing, Presentation Skills, Leadership, Problem-Solving, Time Management, Team Collaboration

EDUCATION

B.Tech in Electrical and Electronics Engineering 2021 – 2025
Andhra University College of Engineering (AUCE)
Percentage: 85.3%

WORK EXPERIENCE

Project Trainee Jan 2025 – Present
ISRO URSC, Bengaluru, India

- Designed high-efficiency **DC-DC bidirectional converters** for spacecraft and EVs, achieving **93%+ efficiency**.
- Worked under ISRO scientists to improve **system stability** using a novel topology that reduces **size and losses**.

Summer Research Intern May 2024 – Jul 2024
IIT Madras, Chennai, India

- Developed a hybrid renewable energy model integrating **solar, wind, hydrogen, and battery storage** in **MATLAB Simulink**.
- Built an **Arduino-based Cyber-Physical Digital Twin** reducing fault localization time to **0.2s** and latency to **20ms**. Video Link.

Summer Intern May 2024
NIT Trichy, Tiruchirappalli, India

- Implemented and analyzed a **three-phase Z-source inverter** (PWM-based) in MATLAB Simulink, achieving a **stable 230V RMS output with 95%+ efficiency**. Project Link.

Electrical Engineering Intern Jun 2023 – Jul 2023
SS Engineers and Consultants, Rajahmundry, India

- Optimized **electrical panel board designs**, ensuring **100% compliance with industry standards** while reducing wiring errors.

FINAL YEAR RESEARCH PROJECT

- **Engineered an IoT-enabled Cyber-Physical Digital Twin** with **real-time bus fault detection**, achieving **15s response time** for precise fault isolation using **Raspberry Pi and ThingSpeak**.
- **Formulated and validated an IEEE 3-Bus Digital Twin** in **MATLAB Simulink**, incorporating an **instantaneous overcurrent relay model** to improve **grid protection and fault response**. Video Link.

CONFERENCE PAPER

- Cyber-Physical-Digital Twin Application for Bus Fault Protection — *Under Review (SEFET 2025)*. Preprint Link.

ACHIEVEMENTS

- Secured a **Project Trainee position at ISRO URSC**, contributing to a **20 lakh DC-DC bidirectional converter project** for aerospace and EV applications.
- Led a team of four to develop an **Arduino-Based Environmental Monitoring System**, presented to the NAAC committee.