Uttam Reddy Pailla

Houston, TX
-Email me on Indeed: http://www.indeed.com/r/Uttam-Reddy-Pailla/de07b67da276c433

Work Experience

Intern - Technical, Research in Digitalization and Automation – Future of Automation

Siemens Corporate Technology - Princeton, NJ
May 2021 to Present

• Developed multi microgrid hardware test setup using 24 TAPAS smart inverters, smart breaker, and smart loads (product of
NREL) for Autonomous and Resilient Operation of Energy Systems with Renewables (AURORA) project at Siemens living lab. Improved active and reactive power sharing among the TAPAS smart inverters running in parallel.
• Testing and validating the grid-forming inverter control by CLA of TMS320F28069M processor for TAPAS smart inverter.
Developed the PLL and smart breaker control logic to synchronize two microgrids and working on a four-microgrid system.
• Implemented a load shedding scheme during overload scenario using the devised voltage threshold logic to prevent the microgrid collapse. Used code composer studio platform in MATLAB and Simulink for programming TMS320F28069M of TI-
C2000 series.
• Simulated the DQ control scheme for five grid-forming inverters with equal load sharing. Designed LC and LCL filters using
MATLAB-script for inverter system to generate design parameters.
• Performed fault sequence analysis for the inverter system and compared results with synchronous machine behavior.
• Implemented scalar control for 6.8MW, 2.2MW, and 4.4MW rated induction motor drives using switching models to analyze the grid stabilization control for MVDC and LVDC grid for a factory. Working on the average modeling for the drives.

Graduate Research Assistant, Power Electronics, Microgrids, & Subsea Electrical Systems Center

University of Houston - Houston, TX
July 2020 to May 2021

• Designed the schematic and PCB layouts for power electronic converter using GaN devices and DC-DC buck converter
(including gate driver circuit), measurement boards in Altium Designer PCB software & tools for hardware testing to perform degradation tests of power electronic devices.
• Analyzed models in LTspice and selected achievable operation components for hardware implementation.

Senior Electrical Engineer, Special Initiatives Division

Larsen & Toubro Limited - Construction, Power, Transmission & Distribution IC - Chennai, Tamil Nadu

May 2018 to December 2019

• Tested and commissioned electrical equipment in 22MW grid integrated solar power plant by collaborating with a team of
2 engineers. Ensured timely closure of the project and client satisfaction while adhering to quality and safety standards.
• Led as a Project In-charge and successfully installed and commissioned Solar Irrigation Project across 410 distribution locations for the Government of Andhra Pradesh, India. Achieved client satisfactory certificates and an additional project bonus for completion of the project 6 days ahead of schedule which provided monetary benefits (73,000 USD).
• Managed a team of 16 people in installing 1.128MW capacity of 3Hp, 5Hp, 20Hp Solar Irrigation System for Rural
Development across India under three government projects.
• Developed technical specifications & bill of material, delegated scope of work for sub-contractors, and reviewed vendor datasheets which resulted in further reducing costs and increased quality & materials selection. Prepared accepted cost estimate and monthly job cost reports for the projects.

Undergraduate Research Assistant

Osmania University, Department of Electrical Engineering - Hyderabad, Telangana
January 2017 to January 2018

• Designed and developed a 3-Stage Power Electronic Interface and associated control philosophy for stand-alone hybrid PV-wind-battery based system for household applications up to 500W load power.
• Simulated the model in MATLAB and developed the hardware prototype.
• Developed MPPT of both sources, battery charge control, and power inversion which was achieved with only four IGBT controllable switches. Improved battery charging efficiency using a single converter stage in its PV source path.
• The proposed controller operated in all possible modes of a stand-alone scheme and ensured smooth transition of modes.

Summer Research Intern

Bharat Heavy Electricals Limited - Hyderabad, Telangana
June 2017 to August 2017

• Carried out an extensive study on the construction of 150MW Turbo Generators.
• Analyzed the various processes that are involved in the manufacture of Turbo Generators, various technologies and materials used in such processes. Also examined different types of generator tests involved.

Education

Master of Science in Electrical Engineering

Cullen College of Engineering, University of Houston - Houston, TX
December 2021

Bachelor of Engineering in Electrical and Electronics Engineering

University College of Engineering, Osmania University - Hyderabad, Telangana
August 2014 to April 2018

Skills

- Tools: Altium Designer, MATLAB and Simulink, PSS®E, PLECS, LTspice, TINA-TI, PSIM, NI Multisim, Power World Simulator, AutoCAD.
  Embedded programming: TI-C2000 series (TMS320F28069M MCU) using model-based platform.
  Programming Languages: AMPL, C, C++.

Links

https://www.linkedin.com/in/uttamreddy