KISHOR JOSHI
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ACADEMIC EDUCATION

Ph.D. in Electrical and Computer Engineering, Mississippi State University, Starkville, MS…….2023-Present

- Courses: Intro to Power Electronics(ECE6653) ,Power Electronic Applications(ECE6990), Feedback Control System I(ECE6913), Feedback Control System II(ECE6923), Non-linear Controls(ECE8923), Power Distribution Systems(ECE6633), Control of DER systems(ECE8633), Optimal Control Systems(ECE8943), Power System Optimization and Control(ECE8683), Stability and Control of Power Systems(ECE8623), Computer Methods in Power Systems(ECE8673), Power Transmission Systems(ECE6613), High Frequency Power Electronics(ECE8990)
- Current GPA: 4.0/ **GTA2 Certificated**   Expected Graduation: Dec 2027

Bachelor's in electrical engineering, IOE Pulchowk Campus, TU, Lalitpur, Nepal…….…………2014-2018

- Major Courses: Electric Machine Design I & II, Electric Circuit I &II, Power Electronics, Electronics Circuits and Devices, Advanced Control Systems, Signal Processing, Microprocessor, Digital Logic, C, C++
- Thesis: Implementation of PV- Solar Inverter STATCOM in   Percentage: 83 %

WORK EXPERIENCE

Mississippi State University   *Starkville, MS*
Graduate Teaching Assistant   *Jan 2022- Present*

- o Document preparation of the course materials for students, Grading students based on lab performance, individual performance, and course examination, Instruct the students and help the students in problem-solving

Cummins Inc   *Fridley,MN*
Power Electronics Control and System Integration Technical Specialist Intern   *May 2025- Aug 2025*

- o To Design of Ultra High Speed PMSM Drive System using FOC and DTC Algorithm Analysis of Control Performance on Hardware in Loop, and Software in Loop Integration of TI launchpad with Lumped Sum HIL FPGA, Plant Support on DC-DC Controls Development

Advanced College of Engineering and Management   *Kathmandu, Nepal*
Assistant Lecturer   *Apr 2022- Dec 2022*

- o Preparation of the Electrical Circuits and Control Systems class lectures, Instruct the students in Power Electronics, and Electric Machines lab according to the guidelines provided by Tribhuvan University, guiding students in developing problem-solving skills and understanding course materials

Prism International-DLRMP   *Lalitpur, Nepal*
Project Engineer   *Jan 2019- Apr 2021*

- o Collaborate with the distribution center to estimate the technical loss of the INPS and suggest possible solutions to minimize the loss, Development of the Line Loss program based on Newton Raphson Method, Organized and Monitored the team of Data Collectors for 20 substations, Computed the technical loss of Province 7, Calculated the distribution loss of Province 7 and recommended the possible suggestions, Developed the report for Nepal Electricity Authority (NEA) for loss reduction implementation

MISSISSIPPI STATE RESEARCH PROJECTS

High Speed Motor Control

Control Logic development for the High-Speed Motor Control using Direct Torque Control in MATLAB, system consists of 450V DC Supply, TI launchpad, Inverter, a cooling system to maintain system performance

Tools Used: Power Electronics, Open Loop Control, Control Systems, MATLAB, Plecs, RT-Box, PI Controller

Modified PFC

Control Logic development for the Power Factor Converter in MATLAB/Simulink and evaluated the results in Hardware in Loop using Plecs/RT-Box for the output voltage of 400V

Tools Used: Power Electronics, MATLAB, Plecs, RT-Box, PI Controller, ePLL

BACHELOR RESEARCH PROJECTS

PV-Statcom: Developed control logic for a PV inverter to function as an active and reactive power generator according to the irradiance level using MATLAB/Simulink for maximum utilization of PV inverter

Tools Used: Advanced Power Electronics, PID Control, MATLAB/Simulink, PSIM

Modeling of Wind-Solar Hybrid System and a Case Study: A case study, modelling, and efficacy recommendation of wind-solar hybrid system with installed capacity of 20 kW wind turbines complemented by 15kW peak solar PV panels with battery storage system in a rural community

Tools Used: Survey, Electrical Load Analysis, MATLAB/SIMULINK, Power System Distribution, PID controller, Advanced Power Electronics

Controlled Rectifier: Modeling of controlled rectifier using GTO and Thyristor for isolated load in micro grid, Research and analysis of the harmonics level and power factor between two models

Tools Used: Electrical Load Analysis, Power Electronics, MATLAB/Simulink, Proteus

Cost Estimation: Program development for Cost estimation of different Transmission Line using different parameters such as voltage level, length, region in MS Excel-VVA programming

Tools Used: Load Analysis, Material Estimation, C++, VVA

Load Flow: Modeling of a load flow model for 10/20/30 bus system using Newton Raphson Method for distribution level voltage in ETAP/Python for radial feeder

Tools Used: Electrical Load Analysis, Power System Analysis, ETAP, Python

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INTERESTS

Motor Drive Control, Renewable Energy, Control of Power Electronics

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PUBLICATIONS

K. Joshi, *S. Bimali, P. Karki, T. Aryal, I. Tamrakar, "Implementation of PV- Solar Inverter STATCOM in Grid Connected System (PV-STATCOM)"*, Journal of the IOE 2019, Vol 15, Issue 3

K.Thapa, A. Maharjan, K. Kaphle, **K. Joshi,** M. Rauniyar, T. Aryal, "*Modeling of Wind Solar Hybrid Systems for Off-Grid in Nepal and A Case Study*" Journal of the IOE 2019, Vol 15, Issue 3

Md Moniruzzaman, **K. Joshi**, Md R. Rahman, Md K. Islam, S. Choi, Masoud K. Ghartemani, "*Implementation and Analysis of Direct Torque Control on High-Speed PMSMs: A Comparative Study of Commercial and Laboratory-Developed Motors*", 2025 IEEE Applied Power Electronics Conference and Exposition (APEC)

PERSONAL DETAILS

DOB: *1998/02/03*   Address: *Starkville, MS, USA*   Hobbies: *Writing, Guitar, Football, Sketch*