Puspal Hazra

https://www.linkedin.com/in/puspalhazra/
https://pharry.github.io/

EDUCATION

CLEMSON UNIVERSITY
M.S. IN ELECTRICAL ENGINEERING
Dec 2020 | Clemson, SC
GPA: 3.5 / 4.0

I.I.T. DELHI
MASTER OF TECHNOLOGY IN POWER SYSTEMS
July 2013 | Delhi, India
GPA: 8.754 / 10.0

IIEST SHIBPUR
BACHELOR OF ENGINEERING IN ELECTRICAL ENGINEERING
April 2010 |West Bengal, India
GPA: 79.07 %

COURSEWORK

GRADUATE
Power System Dynamics (EEL 797)
Power System Transients (EEL 793)
Power System Protection (ECE 824)
Distribution System Engineering (ECE 816)
Power System Optimization (EEL 896)
Power System Analysis (EEL 791)
Power System Restructuring & Deregulation (EEL 891)
Flexible AC Transmission System (EEL 894)
High Voltage DC Transmission (EEL 794)
Digital Signal Processing (ECE 844)
Advanced Nonlinear Control (ECE 874)
Distributed Dynamical System (ECE 893)

SKILLS

PROGRAMMING
Python • MATLAB • LaTeX• HTML • CSS • Quarto

SOFTWARE
RTDS/RSCAD • PSCAD • DIgSILENT PowerFactory • MATLAB • PSS/E • MATLAB Simscape • PLECS • Visual Studio Code

ANALYTIC SKILLS
Probability and Statistics • Linear Algebra • Graph Theory • Optimization • Dynamical Systems • Numeric Computation

EXPERIENCE

SUZLON ENERGY LIMITED | Manager
July, 2025 – Present | Pune, Maharashtra

SUZLON ENERGY LIMITED | Deputy Manager
Feb, 2021 – June, 2025 | Pune, Maharashtra
- Grid code compliance assessment
- Simulation model development, validation and analysis of Wind Energy Systems
- Proficient in various data analysis, data visualization tools

CLEMSON UNIVERSITY | Research Assistant
Aug 2013 – Dec 2019 | Clemson, SC

- Transient modeling of electromechanical, electromagnetic and power electronic energy systems (e.g. Photovoltaic, Gas-Turbine based DER, BESS etc.)
- Switching model and switching average model of power electronic converters
- Linear and non-linear controller design of microgrid systems
- Real time simulation of power electronic energy systems
- Virtual inertial scheme design and analysis of inverter
- Distribution system modeling and analysis in OpenDSS
- Phasor based dynamic modeling and analysis in PSS/E

ARGONNE NATIONAL LABORATORY | Research Aide
May 2017 – Dec 2017 | Lemont, IL

- Dynamic phasor modeling of inverter bases DERs
- Electromagnetic modeling of inverter based DERs in PSCAD, MATLAB
- Model validation of dynamic phasor model with EMT model of switching averaged inverter

PUBLICATIONS

DYNAMIC STUDY OF VIRTUAL OSCILLATOR CONTROLLED INVERTER BASED DISTRIBUTED ENERGY SOURCE
North American Power Symposium | October 2015 | Charlotte, NC
Authors: Puspal Hazra, Dr. Ramtin Hadidi, Dr. Elham Makram

A TIGHT MILP FORMULATION FOR UTILITY SCALE OPTIMAL DEMAND SIDE RESPONSE
IEEE PES General Meeting | July 2016 | Boston, MA
Authors: K. Balasubramaniam, P. Saraf, P. Hazra, R. Hadidi, E. Makram

INERTIAL RESPONSE ENHANCEMENT OF A MICROGRID USING PHOTOVOLTAIC SYNCHRONOUS GENERATOR
IEEE eGRID 2018 | Nov 2018 | Charleston, SC
Authors: Puspal Hazra, Dr. Ramtin Hadidi

DYNAMIC MODELING OF SOLAR PV SYSTEMS FOR DISTRIBUTION SYSTEM STABILITY ANALYSIS
IEEE ISGT NA | Feb. 2019 | Washington, DC
Authors: Siby Jose Plathottam, Shrirang Abhyankar, Puspal Hazra

AWARDS AND ACHIEVEMENTS

2011   Rank 125 in Graduate Aptitude Test in Engineering, 2011
2011   Recipient of Ministry of Human Resource Development, India scholarship for graduate study.

SOCIETIES

2014 - 2019   Clemson University Electric Power Research Association (CUEPRA)
2017 - 2019   Center for Advanced Power Engineering Research (CAPER)
2013 - 2019   IEEE Power and Energy Society

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Specialized in power system modeling and analysis. I have experience in Electromagnetic Transient Modeling of system components, design and modeling of power electronic inverters, control systems design of microgrid/bulk systems, static and quasi-static analysis of power systems.

EXPERIENCE

SUZLON ENERGY LIMITED | MANAGER
July, 2025 – Present | Pune, Maharashtra

SUZLON ENERGY LIMITED | DEPUTY MANAGER
Feb, 2021 – June, 2025 | Pune, Maharashtra

- Grid code compliance assessment
- Simulation model development, validation and analysis of Wind Energy Systems
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CLEMSON UNIVERSITY | RESEARCH ASSISTANT
Aug 2013 – Dec 2019 | Clemson, SC

- Transient modeling of electromechanical, electromagnetic and power electronic energy systems (e.g. Photovoltaic, Gas-Turbine based DER, BESS etc.)
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EDUCATION

CLEMSON UNIVERSITY | M.S. IN ELECTRICAL ENGINEERING
Dec 2020 | Clemson, SC
GPA: 3.5 / 4.0
Thesis: Enhancement of inertial response of inverter based energy system and its application for dynamic performance improvement of a microgrid
Advisor: Dr. Ramtin Hadidi

I.I.T. DELHI | MASTER OF TECHNOLOGY IN POWER SYSTEMS
July 2013 | Delhi, India
GPA: 8.754 / 10.0
Thesis: Control of Inverter based Microgrid
Advisor: Dr. Sukumar Mishra

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PROJECTS

IMPROVED ADAPTIVE UNDER FREQUENCY LOAD SHEDDING SCHEME
Instructor: Dr. Ramtin Hadidi

Abstract: This project was part of a course on Power System Protection (ECE 8240) at Clemson University. Under Frequency Load shedding is the last protective scheme of any power system to prevent blackout. Frequency of any conventional bulk power system with rotating electrical machines can be determined by the rotor speed of the generators. Any sudden load change in the system will cause a temporary change in rotor speed of generators and system frequency as per the swing equations. An under frequency load shedding scheme has been implemented based on rate of change of frequency of the system. An efficient power deficit calculation method has been presented. A multistep load shedding scheme based on rate of change of frequency has been implemented. Load shedding steps have been adjusted to consider primary frequency response of the generators.System is modeled in MATLAB and analyzed using ODE solvers.

DISTRIBUTION SYSTEM MODELING IN EMTP SOFTWARE, SYSTEM ANALYSIS, DISTRIBUTED GENERATION INTEGRATION STUDY AND COST ANALYSIS
Instructor: Dr. Elham Makram

Abstract: This project was part of a course on Distribution System Engineering (ECE 8160) at Clemson University. A 4.16 kV radial, unbalanced distribution system is model in PSCAD with appropriate conductor type as given is system data. Based on power flow study, solution for voltage and power factor improvements are suggested. Type 1 SCIG based Wind Generator is integrated with the system and its impact on system steady state performance is analyzed. As per the material and labor cost provided, return on investment of DG installation has been calculated.

DYNAMIC PHASOR MODEL OF PHOTOVOLTAIC ENERGY SYSTEM

Abstract: This project was part of internship project deliverable at Argonne National Laboratory. Power system dynamics consists of fast and slow time scale dynamics. In electromagnetic transient program (EMTP) power system dynamics for fast time scale (electromagnetic transients) are modeled along with slow electromechanical dynamics. Dynamic equations in EMTPs are solved using numeric integration techniques. Any periodic electrical quantity of power system can be expressed as Fourier series. For dynamic phasor modeling of the system, instantaneous signal is approximated as significant Fourier coefficients which approximates original signal. Dynamic phasor modeling helps improve the computational efficiency of the differential and algebraic equation model with satisfactory accuracy.

TEACHING

TEACHING ASSISTANT: IIT DELHI : JULY, 2011 - JULY, 2013

Tutored undergrad students in effective lab techniques for productive results during laboratory sessions on Power Engineering Lab. (EEP 303), Electrical Machines Lab. (EEP 203), Fundamental of Electrical Engineering (EEL 101), Principle of Electrical Engineering (EEL 102) and Power System Dynamics (EEP 798).

TEACHING ASSISTANT: CLEMSON UNIVERSITY

Responsibilities for teaching assistant for Power System Transients (ECE 8170, TA for Fall 2016, Spring 2019) included grading and solving analytic problems on power system transients for the class, also help the instructor to give necessary technical support on EMTP tools. I helped instructor on grading and updating analytic problem assignments on Power System Stability (ECE 8630) course for Spring 2018. I was also grader assistant for Digital Signal Processing (ECE 8440) course for Spring 2017.

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ANALYTIC SKILLS

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COURSEWORK

GRADUATE

CLEMSON UNIVERSITY

Computation Methods in Power System Analysis (ECE 8070)
Power System Protection (ECE 8240)
Distribution System Engineering (ECE 8160)
Digital Signal Processing (ECE 8440)
Advanced Nonlinear Control (ECE 8740)
Distributed Dynamical System (ECE 8930)
Linear Systems (ECE 8010)
Optimal Control (ME 8930)

More info on courses :
https://www.clemson.edu/registrar/academic-catalogs/archived-catalogs/2013-graduate.pdf

I.I.T. DELHI

Power System Dynamics (EEL797)
Power System Transients (EEL793)
Power System Optimization (EEL896)
Power System Analysis (EEL791)
Power System Restructuring & Deregulation (EEL891)
Flexible AC Transmission System (EEL894)
High Voltage DC Transmission (EEL794)
Power System Control and Instrumentation (EEL796)

AWARDS AND ACHIEVEMENTS

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SOCIETIES

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2013 - 2019   IEEE Power and Energy Society