

Birth May 30, 1998
Address 1630 NE Valley Rd
Apt A102 Steptoe Village Apartments
Pullman, WA, 99163
Phone 509-338-8770
E-mail aryan.r.jha@gmail.com, aryan.jha@wsu.edu

Aryan Ritwajeet Jha

Doctor of Philosophy in Electrical and Computer Engineering

PERSONAL DETAILS

EDUCATION

Master of Science in Electrical Engg.
Indian Institute of Technology Delhi
Currently 8.20 CGPA.

2020 onwards

Bachelor of Engg. in Electrical and Electronics Engg.
with a Minor in Data Science
Birla Institute of Technology and Science Pilani
Hyderabad Campus
Secured 8.47 CGPA

2016-2020

12th from Bansal Public School
Kota, Rajasthan
Central Board of Secondary Education
Secured 90.00% marks

2016

10th from St. Theresa's Convent Sr. Sec. School
Karnal, Haryana
Central Board of Secondary Education
Secured 10.0 CGPA

2014

INTERNSHIPS

Summer Internship
Power Grid Corporation of India Limited, Gurgaon, Haryana
Title : Monitoring Power Systems: SCADA vs WAMS
Supervisor : Dr. R. K. Mittal, Professor, Department of Mechanical Engineering, BITS
Pilani, Pilani Campus

May - July 2018

PROJECTS

Master's Thesis

2020 Onwards

Data Analysis for Predicting Instabilities in Power Systems

Supervisor : Dr. Nilanjan Senroy, Professor, Department of Electrical Engineering, IIT Delhi

An accumulation of stochastic disturbances in the power grid causes various steady state instabilities to develop, which can lead to blackout without any early warning indicators. My objective is to statistically analyze grid parameters such as bus voltage magnitudes, line currents, grid frequencies for symptoms of *Critical Slowing Down*, via statistical parameters such as autocorrelation, variance and power spectral density in order to develop a reliable early warning service which may be used to avoid blackouts or at least mitigate its effects. Dynamic simulations are being done in Siemens PSS®E 34.0 coupled with Python 2.7 being used for automation. Data Analysis is being done in MATLAB.

Bachelor's Thesis

Jan-May 2020

Coordination Schemes for Load Frequency Control of Distributed Energy Resources

Supervisor: Dr. Alivelu Manga Parimi, Associate Professor, Department of Electrical and Electronics Engineering, BITS Pilani, Hyderabad Campus

In order to achieve a more robust control of the grid frequency in a power grid consisting of varied energy resources including photo-voltaics and diesel engine generators, inclusion of storage elements such as large scale batteries and flywheels was proposed. A dynamic state simulation in MATLAB Simulink confirmed the effectiveness of the strategy. Further, an upper limit to the number of such incorporable storage elements, breaching which would otherwise cause the grid to blow up, was also found.

Project Type Course

Aug - Dec 2019

Generalized Transfer Function Based Algorithm to Localize Partial Discharge in a Transformer

Supervisor: Dr. Mithun Mondal, Assistant Professor, Department of Electrical and Electronics Engineering, BITS Pilani, Hyderabad Campus

Due to large amounts of current and voltage transacted via power transformers, locations within the inner dielectrics or oils sometimes tend to ionize and develop a partial discharge, which can cause equipment damage in the long term. Utilizing the RLC ladder network of a transformer to form a MIMO transfer function, an algorithm was designed in MATLAB which, given the current measurements at the live and neutral terminals, would output the location of the single partial discharge affecting the transformer.

Course Project

Jan - May 2019

Simulation and Design of Fast Charging Infrastructure for a University-Based e-Carsharing System

Supervisor: Dr. Sudha Radhika, Assistant Professor, Department of Electrical and Electronics Engineering, BITS Pilani, Hyderabad Campus

Based on the IEEE Transactions on Intelligent Transportation Systems paper of the same name, implemented an intelligent battery charging station in MATLAB Simulink which during the day would check the state of charge of incoming e-vehicles and charge as per the distance to the destination location. During night time, the station batteries would get recharged through the grid power via AC to DC converters.

TEACHING EXPERIENCE

TA for Power Engineering I course

Jan - May 2022

IIT Delhi

(taken by Undergraduate 3rd year students)

Assigned evaluation of minor (mid-semester) answer scripts.

TA for Power Systems Laboratory course

Aug - Dec 2021

IIT Delhi

(taken by Undergraduate 4th year students)

Moderated a doubt session. Made one question paper set for the minor (mid-semester) exam and later graded corresponding responses.

TA for Mathematics III: Differential Equations

Aug - Dec 2018

BITS Pilani Hyderabad Campus

(taken by Undergraduate 2nd year students)

Checked mid-semester answer scripts and made slides for a tutorial session.

COURSES

Courses in Power Systems

Power System Analysis
Power System Protection
Power System Dynamics
Power System Operation and Control

Courses in Data Science

Applied Statistical Methods
Machine Learning
Information Retrieval
Fundamentals of Data Science
Optimization
Neural Networks and Fuzzy Logic

Other Courses in Electrical Engineering

Power Electronics
Electrical Machines
Electromagnetic Theory
Control Systems
Signals and Systems
Digital Signal Processing
Digital Electronics
Microprocessors and Interfacing
Analog Electronics
Digital Image Processing

CERTIFIED ONLINE COURSES

Wind Energy

Denmark Technological University on Coursera 

Battery State of Charge Estimation

UC Colorado System on Coursera [↗](#)



Introduction to Battery Management Systems

UC Colorado System on Coursera [↗](#)



Plasma Physics: Introduction

EPFL on edX [↗](#)



Introduction to Power Electronics

University of Colorado Boulder on Coursera [↗](#)



SKILLS

Languages

Maithili (mother tongue)
English
Hindi

Program-

ming

Languages

C/C++, PYTHON, MATLAB, Julia

Markup

Languages

L^AT_EX

Software

MATLAB SIMULINK, SIEMENS PSS®E, MAPLE

STANDARDIZED TESTS

GRE General Test: 333/340 AWA: 4.5/6.0

TOEFL iBT: 113/120 (including 26/30 in speaking section)

GATE EE 2020 rank 588 out of 90k+ candidates.

OTHER INTERESTS

1. Listening to podcasts related to Energy including The Energy Transition Show with Chris Nelder and MIT Energy Initiative by MITeI
2. Competitive Programming (in C++)