Sushobhan Chatterjee

LinkedIn
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EDUCATION

Indian Institute of Technology, Madras
Chennai, India
Master of Science (Control and Optimization); GPA: 10.0/10.0
Jan 2020 - Present
Advisor : Prof. Rachel Kalpana Kalaimani

National Institute of Technology, Durgapur
Durgapur, India
Bachelor of Technology (Electrical Engineering); GPA: 9.46/10.0
Aug 2014 - May 2018

PUBLICATIONS

- **S. Chatterjee** and R. K. Kalaimani, "Distributed Optimization of Average Consensus Containment with Multiple Stationary Leaders," in *2022 European Control Conference (ECC)*, pp. 1838–1843, 2022

UNDER REVIEW/IN PROGRESS

- **S. Chatterjee** and R. K. Kalaimani, "Distributed Online Optimal Power Flow with Equality constraints," *In Preparation*

WORK EXPERIENCE

Indian Institute of Technology, Madras
Chennai, India
Project Associate
Jul 2022 - Present

- **Optimization and Control of Complex Dynamical Systems** : Worked in distributed online optimization algorithms to establish theoretical bounds over regret and violations.
- **Robotics** : Responsible for designing and implementing distributed algorithms in accordance with Firebot specifications.

Centre for Computational Brain Research (IIT Madras)
Chennai, India
Teaching Assistant
Oct 2021 - Dec 2021

- **Course** : Machine Intelligence and Brain Research
- **Duty** : Responsible for conducting python based tutorials on neural networks, NLP, computer vision etc.

Indian Institute of Technology, Madras
Chennai, India
Teaching Assistant
Jul 2020 - Present

- **Course** : Control Engineering, Applied Programming Lab (Python), and Numerical Methods in C/C++.
- **Duty** : Responsible for designing tutorials and evaluating answer scripts for quizzes.

Linde India Limited
Rourkela, India
Operations and Maintenance Engineer (Electrical)
Aug 2018 - Jan 2020

- **Process Operations** : Worked as an *Operations Engineer* and was responsible for remote ops of cryogenic industrial gas plants ranging from 1400TPD ASU, 40TPD O_2 VPSA to 40TPD N_2 generators, distributed all over South and East India, along with 100TPD ASU in Sri Lanka.
- **Electrical Maintenance** : Involved in electrical maintenance and health monitoring of heavy machineries ranging from LV (440V) to HV (33kV).
- **Electricity Metering** : Designed and automated a template for tracking consumption and generation of commercial electricity bill of 1400TPD Oxygen Plant, Rourkela.
- **Turn-around (TAR)** : Involved in major overhauling event of 2550TPD Oxygen Plant. Responsible for Relay testing and re-calibration of Numerical and Electromagnetic relays viz. OC relays, Distance relays, Pilot-wire protections etc.

CERN (European Organization for Nuclear Research)
Geneva, Switzerland
Research Intern
May 2017 - Jul 2017
Advisor : Dr. Chilo Garabatos Cuadrado

- **GEM Detectors** : Analyzed experimental data to determine the key parameters affecting the charge gradient of the subatomic particles emitted from collisions, as they pass through the Gas Electron Multiplier (GEM) Foils.

Academic Projects

- **Optimal Operation of a Microgrid** : Modified and Analyzed the microgrid model with various additional convex objectives (social welfare, generation cost), and constraints (battery charging rate, transmission line congestion) in order to improve the final result as compared to the original problem. Implemented the problem based on standard datasets using CVX in MATLAB. (Apr'20 - Jun'20)
- **Impact of $\frac{R}{X}$ ratio for various solution methods over different topologies and types of loads** : Project focussed on analyzing the performance of IEEE-33 bus system by varying R/X ratio and solved with Forward-Backward-Sweep (FBS) and Newton-Raphson (NR) method for 3 types of load viz. constant current, constant voltage and constant resistance. (Aug'17 - Mar'18)
- **Transient analysis of stand-alone Induction Generator and design of Electronic Load Controller (ELC) using MATLAB** : Carried out modelling and analysis of Induction Motor as Generator in Simulink and designed an ELC in order to stabilize the o/p voltage fluctuations when induction generator is loaded. (May'16 - Oct'16)

Skills

- **Programming** : MATLAB (primary), Python, C, C++, LaTeX
- **Languages** : English (C2), Hindi (fluent), Bengali (native), Japanese (elementary).

Honors and Awards

- Oral presentation at ECC 2022

- Ranked 2nd among the batch of 94 students in Electrical Engineering of NIT Durgapur.

- Selected in the top 4 among the entire 2018 batch (850+ students) of NIT Durgapur, for funding regarding summer research internship at CERN.

- Ranked 1st among the batch of 180+ students at High School Level A.I.S.S.E 2012

Outreach and Professional Development

- **Peer Review** : IEEE Control Systems Letters, American Control Conference (2021), Indian Control Conference (2021)
- **MOOCs** : Machine Learning [Coursera], Game Theory [Coursera]