Mohammad Ehteshaam

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Education

Concordia University — Montreal, QC, Canada
Master of Engineering in Electrical and Computer Engineering — *2023 – Expected 2025*

Skills Summary

Programming & Tools: Python, MATLAB, AutoCAD, MATLAB Simulink, ETAP

Certifications: Python (Udemy), MATLAB (Udemy)

Experience

The Expert MEP Solutions — Hybrid
Junior Electrical EIT — *April 2024 – Present*

- **Design Support**: Assisted in electrical layout and load schedules for residential/commercial MEP projects.
- **Site Coordination**: Worked with HVAC, plumbing, and ELV teams to ensure aligned MEP execution.
- **Material Handling**: Prepared BOQs and monitored procurement schedules.

Harcomp Airflex Ltd — Location
Electrical Engineering Intern — *Jan 2023 – Aug 2023*

- **Testing and Troubleshooting**: Tested equipment and performed failure analysis to enhance system reliability.
- **Field Inspections**: Performed inspections for Fire Alarm, Power Distribution, HVAC, Lighting & Protection, BMS, Grounding, Telecom, and Traffic Signals.
- **Installation Oversight**: Oversaw installation and testing of Electrical & Instrumentation HVAC systems, driving cost-saving initiatives and ensuring quality compliance.

Central Public Works Department (CPWD) — New Delhi, India
Electrical Engineer Intern — *June 2022 – July 2022*

- **Power Distribution**: Assisted in HT/LT panel installations and solar generation systems (1MW) at Thyagraj Stadium.
- **Pumping Systems**: Supported installation of bidirectional pumps for rainwater dewatering systems.

Publications

Battery Health Monitoring System Using IoT: Presented at IEEE SmartTechCon 2023, August 2023.

A Dynamic Framework of Solar Based Electric Vehicle Charging Station with Artificial Neural Network and Genetic Algorithm Techniques: Under review for Journal of Engineering and International Management.

Projects

Power System Optimization under Uncertainty using GAMS & MATLAB Simulink
Concordia University

- **Optimization Modeling**: Built a cost-minimization model using GAMS under uncertainty in demand, solar irradiance, and energy prices.
- **Simulation Tools**: Simulated system dynamics in MATLAB Simulink with time-series data over a 24-hour load profile.
- **Statistical Analysis**: Applied Monte Carlo Simulation (1000 iterations) to assess parameter variability. Integrated stochastic optimization to improve reliability across 5 demand-supply scenarios.

Design of a Grid-Connected Photovoltaic (PV) System for a House
Concordia University

- **System Design**: Designed a residential grid-connected PV system, performing detailed load analysis, PV sizing, inverter selection, and wiring design using real-world data and simulation tools such as HOMER and PSIM.
- **Sizing and Components**: Applied Global Horizontal Irradiation (GHI) data; selected 12 LONGi 370W panels to match annual load. Designed 6-series, 2-parallel rooftop layout optimized for tilt and azimuth.
- **Simulation and Validation**: Simulated output performance, verified inverter compatibility, and ensured compliance with grid integration standards.

Speed Control of a Brushless DC (BLDC) Motor
Concordia University

- **Hardware Implementation**: Used Arduino Uno and Hall effect sensors to develop rotor position feedback for PWM-based switching logic.
- **PWM Control**: Implemented Pulse Width Modulation (PWM) for smooth speed control, startup, and dynamic acceleration of the BLDC motor.
- **System Validation**: Tested under variable load conditions, confirming stable performance and controlled operation across different speeds.