Tahmin Mahmud

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EE Graduate Seeking Full-Time Role in Power Electronics & Inverter Drive

Experience

Power Electronics & Motor Drive Group, *Graduate Research Assistant* (Prof. Hang Gao) | WSU Lab *Aug 2022 - May 2024*

- Develop and analyze models of advanced high-frequency **AC-AC, DC-AC, AC-DC power converter** electronic circuits and motor drives **V2G-G2V** using MATLAB/Simulink to assess the performance of different systems.
- **Design and build prototypes** of power electronic converters, motor control systems, or related hardware. **Bench test, debug and validate** the prototypes in compliance with lab safety guidelines.
- Assist in the **planning, execution, and documentation of research projects** related to power electronics and motor drives encompassing independent tasks like **literature reviews, data collection, and experimentation**.

Washington State University – Vancouver, *Graduate Teaching Assistant* | WA, USA *Aug 2022 - May 2024*

- Leading lab sections for Advanced Electrical Engineering courses **ECE325*, ECE327*, ECE214*** with up to 30 students.
- Facilitating study and review sessions to reinforce course deliverable and encourage student success.
  ECE325* - Electronic Devices and Applications | ECE327* - Introduction to Power Electronics | ECE214* - Design of Logic Circuits

Control and Applications Research Centre, *UG Research Volunteer* (Prof. AKM Azad) | BracU Lab *Apr 2021 - Jun 2022*

- Critiqued and refined **thesis, conference, and journal manuscripts** while providing valuable feedback.
- Created **project proposals, pitch-decks, presentations, and reports** that showcased innovation and creativity.

DhakaTribune (Popular English Daily in Bangladesh), *Contributing Writer* | Remote *Jun 2020 - Nov 2020*

- Crafted compelling **viral feature articles** through diligent research.
- Provided **event recaps and summaries** to augment publication coverage.

Education

-/4.0 **PhD in Electrical and Computer Engineering (Expected)**, *Purdue University* | West Lafayette, IN, USA *Jul 2024 - Aug 2028*

4.0/4.0 **MS in Electrical Engineering**, *Washington State University - Vancouver* | WA, USA *Aug 2022 - May 2024*

3.6/4.0 **BSc in Electrical and Electronic Engineering**, *Brac University* | Dhaka, Bangladesh *Jan 2018 - Jan 2022*

Achievements: WSUV: Outstanding Graduate Student Class of 2024; Outstanding TA: Grader/Office Hours Class of 2024.

MSEE Relevant Courses: Advanced Power Electronics | Renewable Energy Conversion Systems (WECS) | Emerging Device Technologies | Fundamentals of Lab-on-Chip | Silicon Integrated Circuit Design Technology | Advanced Antenna Design

Skills

Programming	MATLAB, LaTeX, Java (basic), Python (basic), Git
Hardware	dSPACE Control Platform, Tektronix 370A Programmable Curve Tracer, Tektronix P5200A 50MHz High-Voltage Differential Probe, Tektronix DMM 4020 5-1/2 Digital Multimeter, Tektronix PWS2323 DC Power Supply 0-32V & 3A, Tektronix DPO 2024 Digital Phosphor Oscilloscope, Tektronix AFG 3011 Single Channel Arbitrary/Function Generator, DPO RSA3408B Real-Time Spectrum Analyzer, MSO3054 Mixed Signal Oscilloscope, Keithley 4200-SCS Semiconductor Parameter Analyzer, Fluke 87V True-RMS Multimeter, ArduinoUNO
Software	MATLAB/Simulink R2023b, Cadence OrCAD Capture CIS, PLECS, SPICE, ANSYS HFSS, Fusion360 (basic), Altium (basic)
Certifications	Power Electronics Simulation Onramp, Mathworks – (2023) | MATLAB Onramp, Mathworks – (2023)

Projects

Washington State University - Vancouver *Aug 2022 - Mar 2024*

MATLAB/Simulink Software Modeling and Hardware Prototyping using dSPACE Control Platform

Self-paced research initiatives for Master's Thesis:

- Project I: High-Frequency **Common-Mode Voltage (CMV)** Reduced **SVM** for Grid-Connected CSI
- Project II: Novel **FCS-MPC** based **Overlap-Time Effect** Suppression Technique in High-Power **Current Source Inverter (CSI)** Drive under **Stand-Alone Mode**
- Project III: Hybrid **SVM** for **Low-Order Common-Mode Voltage (CMV)** Reduction in CSR for **Transformerless MV Drives**
- Project IV: : **Droop Control Strategy** for **Series-Connected CSI** based Offshore **Wind Energy Conversion Systems (WECS)**
- Project V: FCS-MPC-based HFIMC with **Orthogonal Reference Coordinate** α-β Control for Vehicle-to-Grid (V2G) Applications
- Project VI: Optimizing **Geometric Shapes** for a **Compact Planar Multiband MIMO** Antenna in Vehicular Communications

Brac University *Jan 2021 - Dec 2021*

MATLAB/Simulink Software Modeling and Hardware Prototyping

Final Year Design Project:

- Project I: Design and Accuracy Assessment of a Multi-Input Sinlge Output **Single Ended Primary Inductor Converter (SEPIC)** for Highly Efficient Output from Hybrid Sources of **Renewable Energy**

Publications

All conference proceedings, published journals and preprints can be found in my scholar profile (click here)