

EDUCATION

Iowa State University (ISU), Ames, IA

<i>PhD, Electrical Engineering (with Statistics minor)</i>	GPA: 3.9/4.0	Aug 2023–Dec 2025
<i>Business Analytics Graduate Certificate</i>	GPA: 4.0/4.0	Jan 2022–May 2024
<i>Master of Science, Electrical Engineering</i>	GPA: 4.0/4.0	Aug 2021–May 2023

University of Twente, ENS, Netherlands

<i>Master of Science, Electrical Engineering</i>	GPA: 7.0/10.0	Sep 2015–Jan 2016
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University of the Punjab, LHR, Pakistan

<i>Bachelor of Science, Electrical Engineering</i>	GPA: 3.9/4.0	Dec 2009–Dec 2013
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EXPERIENCE

Electrical and Computer Engineering Department, ISU, Ames, IA

Aug 2021–Present

Graduate Research Assistant

- Developed Statistical Models with Power Distribution Systems data to improve Reliability and Resilience
- Exercised Supervised and Unsupervised ML techniques on 10+ projects as a Business Analytics Student
- Taught 3 electronics courses to 60+ undergraduates and was acknowledged as the best Teaching Assistant

North American Electric Reliability Corporation (NERC), Atlanta, GA

Aug 2024–Jan 2025

Intern – ASAM Team

- Evaluated the resilience benefits of transmission system investments using TADS data
- Integrated weather, TADS, and GADS data for BPS resilience analysis and performed GIS mappings of BPS assets
- Investigated the impacts of large-scale loads, focusing on identifying risk regions prone to wide-area instability
- Performed statistical analyses on the performance of the unreasonable generator inertia constants metric
- Revamped data extraction scripts for PSLF case files, enabling efficient quality assessment of PSLF cases

Electric Power Research Institute (EPRI), Knoxville, TN

May 2024–Aug 2024

Student Employee

- Developed methods to conduct Risk Analysis, Cost/Benefit Analysis, and Sensitivity Analysis for the integration of Grid Enhancing Technologies (DLR and AAR) in transmission planning and operations
- Performed case studies using PSS/E and Python to test and validate the developed methods

Multan Electric Power Company, Multan, Pakistan

Feb 2016–Aug 2021

Distribution System Operations Manager

- Led 2 interdisciplinary technical teams of 60+ individuals in managing and maintaining the electrical power distribution system of more than 40000 consumers
- Accurately assessed technical and administrative losses of the distribution system, saving \$181,000
- Increased company revenues by 6% by developing data monitoring software, even with low resources
- Enhanced distribution system reliability by locating and removing power system constraints on 130+ nodes

Fiverr, Remote

Mar 2015–Aug 2021

Software Development Freelancer

- Programmed and debugged 90+ software projects in Python, C#, C++, Java, PHP, and HTML
- Designed, fabricated, and delivered 40+ electronic hardware projects and solutions
- Promoted to Level 2 Seller for excellent customer service, based on feedback from more than 85 clients

American University of Ras Al Khaimah, RAK, UAE

Sep 2015–Jan 2016

Software Implementation Research Associate

- Implemented the algorithms of Patient Scheduling for an ongoing research project, using MatLab and C++ for software implementation and Arduino for the hardware

LEADERSHIP AND VOLUNTEERING EXPERIENCE

Fulbright Students and Scholars Organization at ISU (FSSO)

Aug 2023–Present

Treasurer

- Promoting the Fulbright program, organizing events to help students, and managing the FSSO's transactions

The State Science & Technology Fair of Iowa (SSFTI)

Mar 2023, Mar 2025

Judge

- Volunteered as the Judge for 6-12th grade student projects

TECHNICAL SKILLS

- *Statistics and Data Analysis:* Python, R, Microsoft Excel, MatLab, Power BI, Mathematica
- *Power Systems Analysis:* PSS/E, PSLF, PSCAD, PowerWorld Simulator, OpenDSS, ETAP, Simscape
- *Programming Languages:* C#, C++, C, Ruby, Java, PHP, HTML
- *Database & DBMS:* MySQL, Microsoft Access
- *Miscellaneous:* Git, LaTeX, Simulink, MatPower, Adobe Creative Cloud, MS Office

PUBLICATIONS

- Ahmad, A., & Dobson, I. (2024). *Quantifying distribution system resilience from utility data: large event risk and benefits of investments*. IET Conference Proceedings, doi: 10.1049/icp.2024.2578
- Ahmad, A., & Dobson, I. (2023). *Towards using utility data to quantify how investments would have increased the wind resilience of distribution systems*. IEEE Transactions on Power Systems, doi: 10.1109/TPWRS.2023.3342729
- Arif, D., Ahmad, A., Bakar, M. A., Ihtisham, M. H., & Winberg, S. (2017, April). *Cost effective solution for minimization of medical errors and acquisition of vitals by using autonomous nursing robot*. In Proceedings of the 2017 International Conference on Information System and Data Mining, doi: 10.1145/3077584.3077598

DISTINCTIONS & AWARDS

Scholarships

- Fulbright Scholarship from the U.S. Department of State for M.S. studies in the U.S. 2021–2023
- Scholarship from edX for Artificial Intelligence online course 2020–2020
- The University of Twente Scholarship for M.S. in University of Twente, Netherlands 2015–2017
- Top Five Students Scholarship during Bachelors (BSc), by Punjab University 2010–2013
- DIP Scholarship in Bachelors (BSc), by Punjab Government 2010–2011
- Merit Scholarship in Bachelors (BSc), by Punjab University 2009–2013
- Merit Scholarship in High School (FSc), by Punjab College 2007–2009

Awards

- 2nd position out of 173 students in B.Sc. Electrical Engineering
- 1st position out of 23 projects in the Project Exhibition at GIKI All Pakistan Science Fair 2014
- 2nd position in Project Exhibition at Pakistan Auto Show (PAPS) 2014
- 1st position in IEEE Industrial Project Competition 2013, competing in 50 projects
- 1st position out of 30 teams in Circuit Designing Competition at UET TechnoFest 2012
- 3rd position out of 75 participants in the Matrix Programming Competition at UCP Engineering Olympiad 2012

