Noor Khan

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Skoltech, Moscow, Russia
Visiting Researcher, KFUPM, Dhahran, Saudi Arabia

Education

MSc Energy Systems Sep 2024 – Present
Skolkovo Institute of Science and Technology (Skoltech), Moscow, Russia
GPA: 3.79/4.00
Focus: Smart grids, low-inertia power systems, optimisation-based control, and applied AI.
Advisor: Prof. Oleg Khamisov

BE Electrical Engineering (Gold Medalist) Jan 2019 – Dec 2022
Sukkur IBA University, Sukkur, Pakistan

Work Experience

Visiting Research Intern – Academic Mobility Program Jan 2026 – Present
King Fahd University of Petroleum & Minerals (KFUPM, QS Rank 67), Dhahran, Saudi Arabia

- Hardware-in-the-loop validation of advanced control algorithms for GFMI using dSPACE MicroLabBox.
- Collaborating with faculty researchers on experimental analysis and preparation of a journal publication.

Power System Protection & Automation Intern Jun 2025 – Jul 2025
Tekvel, Moscow, Russia

- Developed IEC 61850-based digital relay testing workflows using Tekvel Magic.
- Awarded *Best Industrial Immersion Project 2025*.

Engineering Intern May 2023 – Jun 2023
Power and Water Division (PWD), Skardu, Pakistan

- Assisted in monitoring and performance assessment of hydropower generation units.
- Contributed to fault analysis, upgrade recommendations, and technical documentation.

Honours and Awards

- **Gold Medalist**, BE Electrical Engineering (Power), Sukkur IBA University, 2023
  Graduated top-ranked in the cohort for academic excellence.
- **Academic Mobility Scholarship**, Skoltech, 2025
  Awarded to one student for a funded research internship at a top-ranked university.
- **Winner – Best Industrial Immersion Project**, Skoltech, 2025
  Recognized for developing a real-time relay testing framework using Tekvel Magic.
- **National Talent Hunt Program (NTHP) Scholarship**, Sukkur IBA University, 2019
  Fully funded merit-based scholarship awarded to top students nationwide.
- **Third Place – National Book Review Competition**, Sukkur IBA University, 2019

Publications

Khan, N. et al., An Optimal Contingency-Sensitive Inertia and Damping Control for Grid-Forming Inverters. *2025 7th International Conference on Control Systems, Mathematical Modeling, Automation and Energy Efficiency (SUMMA)* Lipetsk, Russian Federation, 2025, pp. 906-911 DOI: 10.1109/SUMMA68668.2025.11302304

Manuscripts in Preparation:

Optimal Adaptive Droop Control with AI-Based Contingency Detection for Frequency Regulation

Manuscript under final preparation for **IEEE Transactions on Power Electronics**.

Optimal Contingency-Sensitive Control for Virtual Synchronous Machine-Based GFMIs
Extended journal version of previously published conference work; in progress.

Projects

Dynamic Modeling of IEEE 9-Bus and IEEE 39-Bus Power Systems
Developed nonlinear dynamic models of IEEE 9-bus and IEEE 39-bus systems in Python, validated against RTDS simulations, and used for optimisation and control studies in ongoing journal work.

Frequency Regulation in Low-Inertia Power Systems
Designed and simulated a droop-controlled low-inertia microgrid to analyse frequency regulation under load disturbances and generator disconnection scenarios.

Hybrid Energy System Design and Integration
Designed and implemented a hybrid motorcycle by integrating electrical and mechanical subsystems, focusing on system-level energy management and control.

Design and Development of a Quadcopter
Designed and fabricated a custom quadcopter including PCB design (EAGLE), hardware integration, and flight controller implementation using open-source MultiWii firmware.

Conferences

- **7th International Conference on Control Systems, Mathematical Modeling, Automation and Energy Efficiency (SUMMA 2025)**, Lipetsk, Russia.
  Presentation: "An Optimal Contingency-Sensitive Inertia and Damping Control for Grid-Forming Inverters."
- **IEEE Student Conference on Engineering, Science and Technology**, Sukkur IBA University, 2021.
  Presented undergraduate final year project on hybrid motorcycle development.

Volunteering & Leadership

International Student Representative — Sep 2024 – Present
Skoltech, Moscow, Russia — International student representation.

General Secretary, IEEE Student Branch — Jan 2021 – Jan 2022
Sukkur IBA University, Pakistan — Coordination of technical activities.

Executive Member, Sports and Adventure Society — Nov 2021 – Jul 2022
Sukkur IBA University, Pakistan — Event planning and team coordination.

Content Writer — Aug 2020 – Feb 2021
Read Pakistan — Educational content creation and outreach support.

Technical Skills

Power & Simulation Tools	RTDS, dSPACE MicroLabBox, MATLAB/Simulink, PSCAD, PSS®E, ETAP
Programming	Python, C++
Design Tools	EAGLE, SolidWorks and AutoCAD, ANSYS Maxwell

Languages

English (Fluent); Urdu (Fluent); Burushaski (Native); Dawoodi (Native); Shina (Fluent)

Interpersonal Skills

Teamwork, decision-making, adaptability, negotiation, networking, multicultural collaboration.

For recommendations *please contact my MSc advisor, Dr. Oleg Khamisov (O.Khamisov@skoltech.ru) and my mentor, Dr. Andrey Churkin (a.churkin@imperial.ac.uk).*