MUHAMMAD HASSAN UL HAQ

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Personal Statement

Enthusiastic about bringing positive societal change using research and technology education, I am keen to forge long term relations with individuals and organizations that promote creativity, innovation and growth. I have a strong and diverse skill set that combines power systems with computer and information technology. I have successfully completed various projects and am currently involved in developing indigenous energy management system.

Education

ME (Electrical Engineering)	In December 2013 from Dept. of Electrical Engineering, NEDUET, CGPA 3.87 (out of 4.0), Specialization in Electrical Power Systems
BE (Electrical Engineering)	In December 2010 from Dept. of Electrical Engineering, NEDUET, Aggregate Percentage: 84.41 (9th rank)
Higher Secondary Certificate (Physics, Chemistry, Mathematics)	In September 2006 from Adamjee Government Science College, Aggregate Percentage: 83.0
Secondary School Certificate (Physics, Chemistry, Mathematics, Computers)	In August 2004 from Dehli Government Boys Secondary School, Aggregate Percentage: 90.0

Work Experience

Assistant Professor at Electrical Engineering Department, NED University of Engineering and Technology from March 2018 to date, and Lecturer in the same department from January 2011 to February 2018. Duties include the following major accomplishments:

Research

Post graduate research carried out at the Institute of Energy and Environment, University of Strathclyde (Scotland), between the duration October 2016 - September 2017. The research was carried out under the supervision of Dr. Andrew Roscoe in the area of 'Power System Metrology'. The program was funded by the European Commission and aimed at developing low cost power monitoring units for future grids.

ME Dissertation on "Design and Simulation of Phasor Measurement Unit as per IEEE Standard C37.118.1-2011" completed in December 2013.

Projects

Supervised high impact FYPs and other research projects:

- SMU (Smart Monitoring Unit): Energy monitoring system with remote terminal for industries. Reached 2nd stage at IBA (Institute of Business Administration) Invent Competition 2014 and won 4th position at NED DICE Energy

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- PMU Time Synchronisation: Won ICT R&D NGIRI Fund for Final Year Undergraduate Project in 2013
- Remote Sub-station Monitoring: Won ICT R&D NGIRI Fund for Final Year Undergraduate Project in 2013
- Phasor Measurement as per IEEE Standard (co-supervisor): Won IEEE SA Award for Under-graduate Projects amounting to USD 800 $ in 2013
- Application of Non-Intrusive Load Monitoring (NILM) to electrical appliance identification (Preliminary phase complete, final phase in development)

Teaching

Taught the following under-graduate theory courses and conducted their laboratory sessions: Circuit Theory, Programming with C Language, Data Structures and Algorithms, Instrumentation, Electric Filters. Conducted Arduino training for BE students in December 2014 and December 2015. Conducted SIEMENS S7-1200 Programmable Logic Controller training for BE students in September 2016.

Administrative

- Lab In-charge, Electric Filters and Signal Processing Lab, February 2011 to July 2011
- Member of Electrical Department's BE-Programme Re-accreditation Team, 2011
- Curriculum design for three new courses – Computers and Programming, Algorithms and Data Structures, Electronic Devices and Circuits – for new curriculum of Electrical Engineering 2015

Affiliations

PEC Member (ELECT/31081), Member IEEE, IEEE PES and IEEE IMS

Internship

Four weeks internship at Systems Unit, Areva T&D Pakistan (now it is GE Grid Solutions) in June 2009. Experience includes:

- Protection Scheme Design
- Interlocking and Co-ordination Schemes
- Grid Station Earthing and Bus-bar Assembly
- Implementing WAPDA Standards for grid equipment procurement

Additional Skills

- Computer simulations in the areas of Power Systems and Signal Processing using MATLAB/Simulink platform
- Micro-controller interfacing and programming on STM32F4 ARM Cortex-M4, Arduino DUE (ARM Cortex M3), Microchip PIC (8 bit), Espressif ESP32, and ATMEL AVR/Arduino
- Programming and design implementation with Beckhoff PLCs
- Computer programming (procedural and OOP) on C/C++ GNU

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Compiler using Code::Blocks and SFML (Simple and Fast Multimedia Library)

Certifications, Trainings and Workshops

- Level 2 Certification in "Entrepreneurship and Enterprise" from Institute of Leadership and Management (ILM), UK in August 2017
- "Strategic Visions Workshop", Center for Entrepreneurial Development, IBA Karachi, September 2014
- "Technical Writing with Latex", Quality Enhancement Cell, NEDUET Karachi, August 2014
- "Technology Entrepreneurship Workshop", Center for Entrepreneurial Development, IBA Karachi, April 2014
- "Siemens Simatic S7-1200 PLC", Center for Continuing Engineering Education, NEDUET Karachi, June 2012
- "Professional Competency Enhancement Program for Teachers (PCEPT)", organized by NAHE (National Academy of Higher Education), HEC at NEDUET Karachi, December 2011

Awards and Honours

- Received scholarship from the University of Strathclyde under European Commission Grant Agreement to work as 'Early Stage Researcher' in September 2016.
- Won IEEE SA Award Funding as Co-Supervisor for Under-graduate Project amounting to USD 800 in 2013
- Represented the Department of Electrical Engineering as Project Supervisor for two (02) Final Year Projects at IEEEP Fair 2013 (29-31 October), held at Expo Center Karachi
- Attained 4th position in NEDAASC (NED Alumni Association of Southern California) Essay Competition 2009 and 2010
- Received Bhaimia Foundation Scholarship for all four (04) academic years in BE, NEDUET

Interests and Activities

Reading books, watching documentaries, making DIY projects, and following technology