Jalal Awan is a doctoral candidate at the Pardee RAND Graduate School and an assistant policy analyst at RAND. Prior to joining RAND, Jalal worked as an electrical engineer with hands-on experience on industrial electrical and control systems. He has worked as a technical consultant at UNDP, NY and Hagler Bailey, Pakistan on concept, design and costing for renewable energy projects in Pakistan. Jalal's research interests revolve around green technologies, climate refugees, international development, AI, energy policy and the smart grid. He has experience working on lifecycle analysis of PV-based off-grid electrical systems and feasibility of autonomous vehicle fleets to tackle traffic congestion in LA. Jalal also has supply chain optimization, energy efficiency and automation and control experience in diverse industrial settings.

• Health, Safety and Environment (HSE) experience in 600MW Integrated Gas-fired Combined Cycle (IGCC) power plant, DuPont Process Safety & Risk Management certified

• Process Optimization, ASQ Six Sigma Green Belt certified

Experience

Assistant Policy Researcher, RAND Corporation - Santa Monica, CA **Sept 2017-Present**

Current Projects:

• Using low-cost air monitoring sensors to create hyperlocal air quality maps and forecasting air quality using deep learning, *Cazier Initiative Grant (2018-Present)*

• Cybersecurity threat modeling for Unmanned Aerial Vehicles (UAVs), *US DHS*

• Addressing Emerging Tech Adoption in Food Production through Digital Games, *RAND Internal Grant*

• Using RAND-Lex Natural Language Processing Techniques to prioritize lessons learnt from disasters, *Center for Disease Control and Prevention* (2018 – 2021)

• Cost-benefit analysis (using EPA's MOVES database) of Ford's Transportation Mobility Cloud, *Ford Motor Company (2019-Present)*

• Using Artificial Neural Networks to study the impact of built-environment on black carbon pollution, *Smart City Design, City of Santa Monica (2018-Present)*

• Proposal evaluation panel member, Lifecycle Analysis of Maintenance Regimes and E-scooter Safety, *National Academy of Sciences*

Electrical Engineer, Engro Corporation - Pakistan **2010-2014**

• Electrical scope planning, procurement, commissioning and plant maintenance in line with Dupont Safety Standards

• Implemented programmable logic control (PLC)-based load-shedding scheme to maintain plant reliability during power swings

• Six Sigma Green Belt; realized USD750K annual savings through intelligent excess product re-routing

• Root Cause Analysis, Failure Mode Analysis based on historical injury statistics and recommendations for improving existing safety system

Education

PARDEE RAND GRADUATE SCHOOL Santa Monica, CA Sept 2017- Present

Phd Candidate in Policy Analysis

Cleared Phd Qualifying Exam (Microeconomics, Econometrics, Statistical Analysis, Operations Research)

Electives completed**:** *Natural Language Processing using RAND-Lex, Advanced Econometrics, Data Science using R, Cybersecurity, Technology Foresight, Decision Making under deep uncertainty,*

UNIVERSITY OF SOUTHERN CALIFORNIA Los Angeles, CA Dec 2015

Master of Science in Green Technologies

UNIVERSITY OF ENGINEERING & TECHNOLOGY Lahore, Pakistan May 2010

Bachelor of Science in Electrical Engineering

Special Qualifications and Certifications

• Fulbright Exchange Scholar, US State Department (2014-2015)

• Leadership in Energy and Environment (LEED GA) certified

• Proposal evaluation panel member, 'NCHRP 02-26 Implementation of Life-Cycle Planning Analysis in a Transportation Asset Management Framework', *National Academy of Sciences (2018-Present)*

• Presented 'Lifecycle impacts of autonomous vs battery electric vehicles', *International Conference on Sustainable Development ICSD, Columbia University (2017)*

Selected Publications

• 'Social and Environmental implications of coal-based power generation in Pakistan', 23rd World Energy Congress Istanbul, Turkey (Oct 12-14 2016), Author: Jalal Awan

• 'Climate Impacts on Youth, Peace and Security in the MENA region', International Conference on Sustainable Development, Columbia University (Aug. 12, 2017) Author(s): Julian Payne, Jalal Awan