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| Sumaiya HussainBS/MS Environmental Engineering |

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Dedicated Environmental Engineer and a passionate advocate for sustainable development and environmental protection, with two years of experience working in the development sector. Expertise includes a range of skills, such as environmental impact studies, project management, stakeholder engagement, policy analysis, and field data analysis. Continuously seeking out new opportunities to expand knowledge and skills in this dynamic and rapidly evolving field. Motivated and detail-oriented Graduate Research Assistant (GRA) contributing to the research in the area of air pollution regulatory accountability and environmental injustice. Impeccable communication and interpersonal skills with a courteous and friendly disposition to inspire and learn in a professional environment

# Education

##### **PhD in Environmental Engineering**

##### ***George Mason University, Fairfax VA* Jan ’23 – Present**

* Graduate Research Assistant (GRA), Department of Civil, Environmental and Infrastructure Engineering
* Research Concentration: Air Pollution Accountability and Environmental Justice Studies
* Current Courses: Development of U.S. Environmental Policy, Energy Policy

##### **Master’s Degree in Environmental Engineering**

##### ***National University of Sciences and Technology, Pakistan* *(CGPA: 3.94/4.00)* Dec ‘22**

* Studied Courses: Wastewater Treatment and Design, Membrane Technology for Water and Wastewater Treatment, Physico-Chemical Processes in Environmental Engineering, Special topics in Environmental Engineering (Environmental Catalysis), Environmental Chemistry

##### **Bachelor’s Degree in Environmental Engineering**

##### ***National University of Sciences and Technology, Pakistan* *(CGPA: 3.39/4.00)* June ‘19**

* Studied Courses: Water Treatment and Supply Network Design, Wastewater Collection and Treatment, Water Pollution Control, Water Resources and Irrigation Engineering, Engineering Hydrology, Fluid Mechanics, Environmental Modelling

# Relevant Work Experience

# Japan International Cooperation Agency (JICA) Pakistan Office (Islamabad, Pakistan)

##### ***Program Officer Energy and Water Resources* March ’22 – December ‘22**

* Develop, process, monitor and supervise JICA programs on Electric Power, Energy and Water supply sector development
* Assist missions from the JICA headquarters, by coordinating with related Japanese and operational/administrative staff, and make necessary recommendation on mission's findings
* Ensure frequent and effective coordination and information collection with government institutions at federal/local level and donor agencies and private sector

##### **Finite Engineering (Pvt.) Ltd. (Islamabad, Pakistan)**

##### ***Environmental and Compliance Engineer*  January ‘21 – February ‘22**

* Conducted field and desk studies to study baseline conditions and anticipated environmental impacts of a number of construction projects
* Recommended suitable mitigation measures and an effective monitoring plan for their successful implementation
* Prepared Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) reports
* Coordinated with various Government Departments and Stakeholders at Provincial and District Level for collection of relevant data
* Provided engineering assistance to make sure compliance with laws/regulations and standard operating procedures

**Oil and Gas Development Company Limited (Islamabad, Pakistan)**

***HSE Intern* August ’18 – September ‘18**

* Studied environmental laws to learn about compliance and permitting
* Calculated total carbon footprint of an oil field and suggested various ways to reduce the carbon footprint

**Matracon (Pvt.) Ltd. (Islamabad, Pakistan)**

***Environment and Compliance Intern* June ’18 – August ‘18**

* Assisted in evaluating the feasibility and environmental impact of two ongoing construction projects

**Pakistan EPA (Islamabad, Pakistan)**

***Water Quality Intern* July ’17 – August ‘17**

* Participated in field activities (water sampling) and drinking water testing to ensure that water utilities met EPA regulations
* Performed data entry and analysis for water quality data of water utilities all over the country
* Achieved 35% monthly savings through energy conservation by revamping the water quality laboratory
* Participated in environmental monitoring visits, and prepared inspection reports

# Engineering Design Projects

##### **Solar Thermal Water Purification System**

* Designed and fabricated a prototype of a solar thermal water purification system which can treat saline and ground water

##### **Complete mix Activated Sludge Process Design for NUST Campus**

* Process design for treatment of 0.6 MGD wastewater using activated sludge process. Design specifications of suspended growth system and secondary clarifier were suggested for 95% BOD removal

##### **Trickling Filter for Domestic Wastewater Treatment in Pakistan**

* Investigated efficiency of currently employed trickling filters in Pakistan to determine feasibility of this treatment option for domestic wastewater

##### **Pesticide Removal from Water by Nanofiltration and Reverse Osmosis**

* Investigated efficiency of pesticide removal from water using membrane technologies as an economically viable solution

##### **Control Technologies for Indoor Air Pollutants**

* Investigated efficient control technologies for control of indoor air pollutants including particulate matter, VOCs, and bacteria. The reviewed technologies include nanofiber filters, carbon nanotubes, photocatalytic oxidation, biofiltration, adsorption and hybrid technologies

# Skills

* Air pollution models: CMAQ
* Environmental Impact Studies
* Programming Languages: C, R, RStudio, Matlab
* Software: Origin, Xpert Highscore, AutoCAD, ArcGIS, EPI Suite, EPANET, GPS-X, RETScreen
* Others: Microsoft Office (Microsoft Word, Microsoft PowerPoint, Microsoft Excel)