



# Samia Farooq

**Date of birth:** 07/07/1998 | **Nationality:** Pakistani | **Gender:** Female | **Phone number:**

(+92) 3350434431 (Mobile) | **Email address:** [samiaa1417@gmail.com](mailto:samiaa1417@gmail.com) | **LinkedIn:**

[www.linkedin.com/in/samia-farooq-1949621a9](https://www.linkedin.com/in/samia-farooq-1949621a9) | **Address:** Lahore, Pakistan (Home)

## ABOUT ME

Graduate with a research-oriented mindset and expertise in aquatic toxicology, focusing on emerging contaminants such as trace metals, nanoparticles, microplastics, nanoplastics, and phthalates. Currently driving environmental sustainability by shaping policies and advocating for aquatic life through innovative research and data analysis. Actively exploring advancements in aquatic ecosystem health, water quality management, and urban planning. Passionate about merging data science with environmental research, employing tools like Python, R, and ArcGIS to analyze field data and uncover trends that inform impactful decisions. Eager to collaborate with environmental tech startups and pursue further studies to propel sustainable practices, aiming to make a significant difference in global environmental protection.

## WORK EXPERIENCE

02/10/2023 – CURRENT Lahore, Pakistan

**VISITING LECTURER** COLLEGE OF EARTH AND ENVIRONMENTAL SCIENCES, UNIVERSITY OF THE PUNJAB.

**During my tenure at the University of Punjab as a Lecturer, my responsibilities include:**

- Taught courses "**Environmental and Risk Assessment**" and "**Application of Economics in Water Management**".
- Improved course engagement and student performance by **25%** through the integration of interactive teaching methods and practical applications.
- Instructed students in essential software tools such as **R, ArcGIS, EcoRisk View, and OriginPro**.
- Emphasized practical applications, critical thinking, and problem-solving skills.
- Prepared students for careers in environmental risk management, assessment, and water resource economics and management.

**Business or Sector** Education | **Department** College of Earth and Environmental Sciences | **Website** <https://pu.edu.pk/home/department/49>

15/12/2021 – 05/10/2023 Lahore, Pakistan

**ENVIRONMENTAL COMPLIANCE OFFICER** IRTIQA DESIGNS

**At Irtiqa Design, as an Environmental Compliance Officer (20hrs/wk), my duties include:**

- Ensured adherence to relevant government permits and environmental laws during site establishment or demolition.
- Supervised the proper handling, storage, and disposal of hazardous materials, particularly in industrial areas such as Sundar Industrial Estate and Mudkay for Textile Chemicals.
- Developed site safety plans.
- Contributed significantly to the appraisal and assessment of environmental quality during field tests.
- Offered guidance and training to team members on best environmental practices and organized workshops within the organization.
- Enhanced environmental compliance and safety measures by **20%** through the implementation of rigorous training programs and systematic field evaluations.

Key skills: **ETAB, Microsoft Excel, and ArcGIS**

**Business or Sector** Construction | **Department** Safety & Compliance | **Website** [www.irtiqadesign.com](http://www.irtiqadesign.com)

01/04/2020 – 31/03/2021 Lahore, Pakistan

**SCIENTIFIC RESEARCHER** ECOTOXICOLOGY LAB, COLLEGE OF EARTH AND ENVIRONMENTAL SCIENCES, UNIVERSITY OF THE PUNJAB.

- Accompanied the professors on field trips to learn sampling methods, techniques, and data collection.
- Identified various species of **macroinvertebrates** based on their morphological characteristics for lab reference.
- Assisted Masters and PhD scholars in researching plastic pollution in freshwater systems by providing expertise and guidance.
- Supported students with experiments involving **soil and fish samples**, using technical laboratory equipment and basic software tools.
- Improved lab efficiency and data management by **15%** through effective collaboration and assistance in laboratory tasks.

01/01/2021 – 30/04/2021 United States

**CLIMATE CHANGER (INTERN)** OXFAM

- Ran campaigns focused on raising awareness about climate change and its potential causes.
- Created impactful content for social media platforms to engage and educate people on the urgent need for climate action.
- Actively advocated for sustainable lifestyle choices and proposed viable solutions to combat environmental challenges.

Skills: **Adobe Illustrator · Microsoft PowerPoint · Qualitative Research · Canva**

Website <https://www.oxfam.org/en>

11/07/2019 – 23/08/2019 Lahore, Pakistan

**INTERN- SOLID WASTE MANAGEMENT DEPARTMENT** LAHORE WASTE MANAGEMENT COMPANY

- Undertook regular visits to assess environmental practices, seeking out sustainable improvement solutions.
- These solutions were then presented at conferences, contributing to a broader dialogue on environmental stewardship.
- Conducted training sessions for workers, empowering them with the knowledge and skills needed to adopt sustainable approaches in their work.

Skills: **Microsoft Excel · Microsoft PowerPoint · Microsoft Word · Report Writing**

Department Solid Waste Management Department | Website [https://lgcd.punjab.gov.pk/lahore\\_waste\\_management\\_company](https://lgcd.punjab.gov.pk/lahore_waste_management_company)

## EDUCATION AND TRAINING

22/10/2021 – 31/08/2023 Lahore, Pakistan

**MS ENVIRONMENTAL SCIENCES** College of Earth and Environmental Sciences, University of the Punjab.

I evaluated the spatiotemporal comparison of trace metal detection (**As, Cu, Cr, Mn, Ni, Pb, Sr, Ti, and Zn**) in *Macrobrachium* sp. using **ICP-MS** for precise analytical measurements. I also determined the potential risks of trace metals to *Macrobrachium* sp. and their ecosystem. Analyzed and visualized data with **OriginPro, RStudio, and ArcGIS** to support and communicate these findings effectively and additionally, assessed the impacts of trace metals on humans, plants, and birds.

Website <http://cees.edu.pk/> | Field of study Natural sciences, mathematics and statistics | Final grade 3.88/4.00 |

Thesis Spatiotemporal variation of trace elements in *macrobrachium* sp. from Ravi and Chenab Rivers, Pakistan

22/11/2017 – 31/07/2021 Lahore, Pakistan

**BS ENVIRONMENTAL SCIENCES** College of Earth and Environmental Sciences, University of the Punjab.

My research highlighted the spatiotemporal variations of microplastics in the gut contents of *Macrobrachium* sp. and the association of microhabitats with collected **macroinvertebrates'** tolerance levels was also evaluated to assess further the water quality conditions of these rivers at various sites. I gained expertise in using **Fourier Transform Infrared Spectroscopy (FTIR)** to identify and quantify microplastic particles. I utilized various tools such as **R** for statistical analysis, **OriginPro** for data visualization, and **ArcGIS** for spatial analysis.

Website <http://cees.edu.pk/> | Field of study Natural sciences, mathematics and statistics, Environmental Sciences | Final grade 3.71/4.00 |

Thesis Patterns of macroinvertebrates diversity in River Ravi and River Chenab in context to Microplastic Pollution

02/2020 – 02/2020 Lahore, Pakistan

**MEDICAL WASTE DISPOSAL METHODS AND FIRE SAFETY PROCEDURES** Training conducted by Shaukat Khanum Memorial Cancer Hospital and Research Centre

Website <https://shaukatkhanum.org.pk/health-care-professionals-researchers/quality-patient-safety-department/>

## LANGUAGE SKILLS

Mother tongue(s): **URDU**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
<b>ENGLISH</b>	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

## DIGITAL SKILLS

R, RStudio | Origin Software | Microsoft Excel | Data visualization (graphs maps infographics) tools Tableau PowerBI | ArcGis | SPSS | Python and SQL | Good knowledge of software SigmaPlot | QGIS | EcoRisk View | Soil and Water Assessment Tool (SWAT)

## VOLUNTEERING

---

15/08/2023 – CURRENT Rotaract Club of Lahore

### Director Environmental Chair/ Content Writer

---

- Organize tree plantation activities hence, contributing to environmental conservation and sustainability efforts.
- Conduct workshops on climate change, aiming to raise awareness and foster a deeper understanding of its impacts and solutions within the community.
- Produce content for different social media platforms of the Club.

01/03/2021 – 30/06/2021 SEEK-NPO

### Volunteer Intern

---

- Participated in creative and fun activities on weekends with the orphans and used to prepare meals/snacks for them.
- Dedicated my time to making a positive impact in the community.
- Regularly visited Senior citizens' homes, bringing companionship and support to brighten their days.
- Spent time at Orphanages for special-needs children, creating engaging activities tailored to their unique abilities and interests.

## COURSES

---

2021 – 2024

### Virtual Courses

---

- "**Data Science Bootcamp**" course from Atom Camp which covered Excel, Statistics, Linear Algebra, Python, Power Bi, Machine Learning".
- "**Introduction to Python**" course from Udemy which covered the basics of Python and SQL.
- "**Chemical and Health**" course from Johns Hopkins University which covered the chemicals in our environment and our bodies and how they impact our health.
- "**COSHH Risk Assessor**" from the Knights of Safety covered the risk assessment regarding chemical handling and safety and the impacts on human health from exposure to hazardous substances.

## HONOURS AND AWARDS

---

### National/International

---

- Won **1st position** in an International Documentary Contest on **Plastic Pollution**.
- Appointed as **JUDGE** by the School Life Foundation on an event about the "**Role of Traffic Police in the Eradication of Environmental Pollution**".
- Won the title of **Best Rotaractor** for recognizing my efforts in initiating awareness about **Climate change and Sustainability**.

## CONFERENCES AND SEMINARS

---

2020 – 2024

### Conferences and Seminars

---

- ETEES 4th International Conference on " Emerging Trends in Earth and Environmental Sciences"
- Applications of Geo-Spatial technology in Earth and Environmental Sciences (Hands-on training workshop)
- Earth Day 2023 & 2024 "Planet vs Plastics" Joint Collaboration of Earth and Environment Sciences, University of the Punjab.
- 42nd Pakistan Congress of Zoology (International) at Department of Zoology, University of Azad Jammu and Kashmir, Muzaffirabad
- Plastic Pollution Free Pakistan: An International series of Awareness Webinars

## PROJECTS

---

09/2023 – 04/2024

### Applications of polyaniline-based nanocomposites for enhanced removal of lead from aqueous solution

---

Firstly, I assisted in the preparation of nanorods using three different samples: MnO<sub>2</sub>, DBSA + Polyaniline + MnO<sub>2</sub>, and Polyaniline + DBSA. These nanorods were prepared under specific conditions to treat the heavy metal lead in synthetic wastewater. To evaluate the efficacy of these nanorods (MnO<sub>2</sub>, PANI, and DBSA) in synthetic wastewater, we assessed their performance based on variations in starting pH, initial concentration of lead, contact time, and competing ions. Additionally, we delineated the mechanism responsible for lead adsorption on the nanorods using SEM-EDS and kinetic modeling. Various techniques were employed during the procedure, including **atomic absorption spectroscopy**, **scanning electron microscopy (SEM)** with **energy-dispersive X-ray (EDX) spectroscopy**, **Fourier transform infrared spectroscopy (FTIR)**, and kinetic modeling (pseudo-first-order and pseudo-second-order). **OriginPro** was used for initial data visualization and fitting, while **R** was used for more advanced modeling and analysis.

2022 – 2023

### Investigation of Toxic Trace Elements in Muscles of Different Bird Species

---

I actively participated in MS student's research titled "Investigation of Toxic Trace Elements in Muscles of Different Bird Species" by assisting in dissection. I helped extract muscle samples from various bird species, including **cattle egrets, house crows, bank**

**mynas, kingfishers, black drongos, pond herons, and white-browed wagtails.** Additionally, I provided critical feedback on the research methodology, including the **ICP-OES** analysis, ensuring accurate and reliable results.

2020 – 2021

### **Distribution of Plasticizers in Environmental Matrices of Surface Water System, Punjab, Pakistan**

---

This study was conducted to assess the presence of **plasticizers** in the surface water systems of the Punjab province. I assisted a PhD scholar in the ecotoxicology lab with the extraction of plasticizers from the samples using **solid-phase extraction** and **solid-liquid extraction techniques**. I am well-equipped with skills related to the extraction of organic pollutants from environmental samples.