

# SYED DANISH ALI

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## PROFILE

- MSc researcher investigating regime shifts in Norwegian glaciers using empirical-statistical methods & machine learning.
- Now seeking a PhD opportunity that aligns with my interests in climate & ocean dynamics, programming, modeling, machine learning.

## EDUCATION

### Master of Science in Marine Environment & Resources

*Erasmus Mundus Joint Master's Degree (MER2030)*

Sep '23 - Sep '25

Europe, EU

- **Université de Bordeaux** (France), **Universidad del País Vasco** (Spain), **Université de Liège** (Belgium)
- GPA: 8.31 / 10 – *High honors*
- Nominated finalist – Prof. M.B. Collins Award for Best Master's Thesis (2025)
- Erasmus+ Scholarship & Grants

### Bachelor of Science (Honors) in Geology

*University of Delhi*

Jul '20 - Jul '23

New Delhi, India

- GPA: 8.122 / 10 GPA – *First Division*
- Minor in Mathematics & Physics
- L. Austin Week's Undergraduate Grant (by American Association of Petroleum Geologists- U.S.A.)

## RESEARCH EXPERIENCE

### Visiting Researcher

*University of Glasgow: School of Geographical and Earth Sciences* (Climate Dynamics Lab)

Feb '25 - Present

Scotland, U.K.

- **Master Thesis** titled "Detection and explanation of shifts in the climatic controls on Norwegian glaciers." completed in August 2025, under the supervision of Dr. rer. nat. habil. Sebastian G. Mutz.
- **Web-Links:**
  - Thesis Manuscript– <https://tinyurl.com/37rh56jt>
  - Presentation Recording– <https://tinyurl.com/4k7t2nbv>
- **Project aims:**
  - Quantifying shifts in glacier–climate relationships (pre-/post-2000) to detect potential regime changes.
  - Developing an empirical-statistical (downscaling) model framework for glacier mass balance.
  - Employing and testing multiple machine learning techniques and model types.
  - Coupling the best model(s) with GCMs (e.g. CMIP6) to predict future glacier trajectories.
- **Key Competencies:**
  - Designing and executing the research plan in collaboration with the supervisor.
  - Working with the 'pyESD' package to adapt and extend the package for glacier applications.
  - Drafting a peer-review-style manuscript of the thesis findings for submission to open-access Q1 journal(s).

### Research Intern

*Universidad del País Vasco (UPV/EHU)*

Jul '24 - Aug '24

Plentzia, Spain

- **PlasteMER project** at Plentzia Marine Station
- Focused on the assessment of microplastic (MP) abundance in the Urdaibai Estuary, Basque Country.
- **Key Competencies:**
  - Assisting a PhD student involved in the project.

- Operating a laminar-flow cabinet in a clean laboratory to minimize contamination.
- Performing the chemical digestion of polychaete samples to quantify MP abundance.
- Preparing laboratory reagents (e.g. acetic acid, ethanol, filtration membranes).

## Research Intern

*Universidad del Pais Vasco (UPV/EHU)*

May '24 - Jul '24  
Plentzia, Spain

- **ECOTRANSEAS project:** A Professional Placement in a European project at Plentzia Marine Station.
- Focused on the ecotoxicological analysis of ballast water from 3 ports in Spain (Algeciras, Bilbao, & Valencia).
- **Key Competencies:**
  - Categorizing and organizing water samples from the ports.
  - Measuring and analyzing the chemical properties of the water samples.
  - Conducting toxicity tests on sea-urchin embryos (SET, ICES, 2012) & polychaetes (coelomocytes viability).

## OTHER EXPERIENCE

### Student Help Team: Library Manager (Part-Time)

*Universidad del Pais Vasco (UPV/EHU)*

Apr '24 - Jun '24  
Plentzia, Spain

- Management of the research archive at the Plentzia Marine Station.
- Responsibilities included cataloging & organizing the research paper archive, maintaining and preserving records, facilitating access, ensuring compliance with guidelines, and supporting research activities.

### Gas Chromatography Analyst (Intern)

*Greatwall Drilling Company*

Nov '22 - Dec '22  
Kuwait

- Gained an understanding about: Hydrocarbon detection and analysis, Gas thermal conductivity, Infra-red absorption, Gas sampling, separation, identification & measurement.

### Mud Logger (Intern)

*Geolog International Kuwait*

Sep '22 - Oct '22  
Kuwait

- Gained an understanding about: Petroleum generation & accumulation, Drilling techniques, Flow line analysis, Lithologic & Mineralogical analysis, Mud log charts & data analysis.

## PROJECTS

### Ecological Modeling – NPZDO<sub>2</sub> Biogeochemical Model:

- Extended NPZD framework model with oxygen dynamics for eutrophication management, nutrient speciation, & sediment interactions.
- Data Analysis & Visualization in R (used FME for parameter sensitivity).

### 2D Diffusion Model in Geophysics:

- Simulation of pollution patch using Finite Difference Method (FDM) with explicit and implicit numerical schemes (Neumann boundary conditions & optimized CFL constraints for stability).
- Programming with Julia (in Jupyter Notebook) to test diffusion models using sparse matrices and iterative solvers for efficiency.

### Sertraline Toxicity in Copepods (*Acartia tonsa*):

- Designed an acute toxicity bioassay: Sertraline (SRT) on marine copepods over 24h and 48h exposure.
- Conducted ANOVA, Probit analysis, and time-dependent mortality tests using R and IBM SPSS.

### Estuarine Hydro-Sedimentary Model- Gironde Estuary, France:

- Processed ADCP velocity profiles, CTD-derived salinity, turbidity, and oxygen using R.

- Processed multispectral reflectance data to map SPM and turbidity zones (using ArcGIS & LANDSAT-8 imagery).
- Implemented bottom-tracking ADCP methods to quantify sediment transport dynamics and turbulence during tide reversals.

#### **Ecological Quality Assessment of Intertidal Communities in Bilbao, Spain:**

- Applied PRIMER & PERMANOVA for statistical analysis of ecological community structures (Macrobenthic fauna diversity & pollution gradient impacts) in La Salvaje and Arrigunaga, Bizkaia, Spain.
- Identified long-term ecological recovery trends through historical data comparisons.

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## **SKILLS**

- **Technical:**
  - Programming: R (Intermediate), Python (Intermediate), Julia (Beginner)
  - GIS: QGIS & ArcGIS (Intermediate), SNAP (Sentinel Application Platform)
  - IBM SPSS Statistics
  - Microsoft Office Suite: Excel, Word, Access, etc.
  - Mathematica (Wolfram), Circuit designing (LT Spice)
  - Adobe: Photoshop, Illustrator, AI
- **Language:**
  - English: C2
  - French: A1
  - Hindi: C2
  - Urdu: C1
- **Other:**
  - International Driving License Permit

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## **MEMBERSHIPS:**

- American Association of Petroleum Geologists (AAPG) : *(2021- Present)*

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## **REFERENCES:**

1. **Name:** Dr. rer. nat. habil. Sebastian G. Mutz  
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