

Atta Ullah

Data Scientist at Weather and Climate Services (Pvt.) Ltd.
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About I am currently working as a Lead of Climate Data and Modelling Team at Weather and Climate Services (Pvt.) Ltd., Islamabad, Pakistan. Previously, I received my master's degree in computer science from Quaid-i-Azam University, Islamabad, Pakistan. My research primarily intersects the field of data science, machine learning, complex systems, and climate change, with a focus on extreme event detection, extreme event attribution (e.g., floods, heatwaves), compound extreme and modeling humid heat stress. I am actively involved in these areas and contributing through publications and reports. My work has been published in renowned venue such as Nature Climate Change, Frontiers in Climate, CEUR-WS, MediaEval and World weather attribution.

Research Interest and Expertise Climate Attribution of Extreme Events, Humid Heat Stress, Risk Assessment, Floods, Heatwaves, Machine Learning, Graph Neural Networks, Transformers, Time-Series Forecasting, Convolution Neural Networks

Education **M. Phil. Computer Science** Sep 2021 - Nov 2023
[Quaid-i-Azam University](#), Islamabad, Pakistan
Advisors: Dr. Rabeeh Ayaz Abbasi and Dr. Anwar Said
Dissertation: Identifying Misinformation Spreader on Twitter using Ego-Centric Network Embeddings.
Major: Social Network Analysis, Graph Machine Learning, Graph Neural Network
Minor: Artificial Intelligence, Machine Learning, Deep Learning, Computer Vision

B.S, Computer Science Sep 2017 - Sep 2021
[University of Swat](#), Khyber Pakhtunkhwa, Pakistan
Advisor: Mr. Muhammad Habib
Dissertation: Learning Management System and Parental Control System
Major: Problem Solving, Data structure and Algorithm, Agile development, Web Development, Mobile App Development **Minor:** Mathematics and Statistics

Research Experience **Weather and Climate Services (Pvt.) Ltd.** Dec 2023 - Present
Lakeview Lanes, Banigala, Islamabad, Pakistan
Research Interest: Extreme Event Attribution, Humid Heat Stress, Heatwaves, Compound Extreme, Risk Modeling, Floods, Bias Correction, Down Scaling, Machine Learning, Data Science, Complex Systems

Social Computing Lab

Jan 2022 - Sep 2023

Quaid-i-Azam University, Islamabad, Pakistan

Research Interest: Conspiracy source detection in social networks, Graph Machine Learning, Graph Neural Network, Modelling Complex Systems, Graph Attention

Awards and Honors

- Prime Minister's Youth Laptop Program, Higher Education Commission, Pakistan
- Winner – Hackathon Competition (8th Episode of ExclTeCup 2023), Capital University of Science & Technology (CUST) – Awarded Highest Prize Money
- Graduate Research Fellowship, Quaid-i-Azam University, Islamabad, Pakistan
- Fellowship, Govt Jahanzeb College, Saidu Sharif Swat, Pakistan

Work Experience

Research Associate & Data Scientist

Dec 2023 – Present

[Weather and Climate Services \(Pvt.\) Ltd.](#), Islamabad

- Responsible for handling large-scale climate models, gridded observations, and meteorological stations data
- Study meteorological extreme events including floods, heatwave, their compounding and humid heat stress by assessing physiological limitation
- Work in attribution science to draw relationship between extreme events and changing climate
- Extensively work in Climate Data Operator, Python, R, and MATLAB for exploiting data, visualization, assessment, downscaling, and bias correction
- Employ machine learning based method like graph neural networks in complex risk modeling and cascade events
- Highly involved in mathematics and statistics including extreme value theory, stochastic learning, and human physiological models
- Lead two teams responsible for data manipulation and dashboard development for monitoring and forecasting humid heat in Pakistan

Research Engineer | Applied AI Engineering

Oct 2025 – Dec 2025

[DeepGraphAI](#), Islamabad, Pakistan

- Developed and optimized graph-based machine learning models for analyzing large-scale scientific datasets.
- Worked on knowledge graph construction, entity linking, and relationship extractions.
- Implemented Graph Neural Networks (GNNs) for representation learning on complex relational data.
- Contributed to developing tools for scientific knowledge discovery, integrating research papers, authors, and citation networks.
- Collaborated with cross-functional teams to design scalable pipelines for data ingestion, graph storage, and query optimization.
- Applied embedding techniques and vector-based retrieval to enhance semantic search and recommendation performance.

Backend Developer

May 2021 – Sep 2023

Baitech, Qatar

- Designed and developed core functionalities of the platform as a backend developer.
- Built and optimized RESTful APIs using Node.js and Express.js, managed databases with MySQL, and ensured secure and efficient data flow.
- Focused on improving system performance, scalability, and security to create a smooth and reliable user experience.

MERN Stack Developer

Sep 2021 – Jan 2022

OpenBittz Digital Agency, UAE

- Developed both front-end and back-end applications using the MERN stack.
- Designed and implemented databases using MySQL and developed RESTful APIs with Node.js and Express.js.
- Developed dynamic web applications on the front end using React, JavaScript, HTML, CSS, and Bootstrap.

INTERN | Web and Mobile Developer | Full Stack Developer

Jan 2017 – Aug 2021

MaxTech Developers, KPK, Pakistan

- Developed both front-end and back-end applications for web and mobile platforms.
- Back-end responsibilities included database design, implementation, and API development for data extraction.
- Front-end development using HTML, CSS, Bootstrap, JavaScript, and React.
- Developed Android applications to expand service accessibility.

**Tools
Developed**

- Developed World Weather Attribution methodology for extreme event attribution in Python
- Designed humid heatstress dashboard for forecasting of metabolic equivalent task during extreme hot conditions
- Working on a dashboard to present the tradeoff between extreme humid heat condition and productivity of skilled labor in Pakistan (will extend to globe)
- Rental Property Finder App
- Learning Management System
- IT Academy Center Institute Management System
- CarParkFinder
- Blood Donor Finder
- Azad Medicine Company Supplier Order
- Commonwealth Toner and Ink
- ZAMASHOPS Buy & Sell Pakistan
- CHD Ontology

Technical Qualifications	Programming and Modeling Tools Languages & Libraries: PHP, Python, R, Java, C++, JavaScript, SQL, Bash Scientific Computing: PyTorch, TensorFlow, Matlab, OpenCV, Numpy, Pandas, GeoPandas, ClimX, NetworkX, Owlready2, Climate and Spatial Tools: CDO, xarray, NetCDF, ERA5, CPC, IMERG, Merra2, CRU, CHIRPS, CHIRTS, RCMs, GCMs Visualization and Dashboards: PowerBI, Matplotlib, Seaborn, Plotly Developments and Systems: Ubuntu, Django, Flask, Laravel, CodeIgniter, React.js, Node.js Data Science and Systems Modeling Machine Learning & AI: Machine Learning, Deep Learning, Graph Neural Networks (GNNs), Explainable AI, Data- Centric AI Computer Vision & Image Analysis: Computer Vision, Anomaly Detection, Image Segmentation Graph & Network Modeling: Graph Theory, Graph-Based Modeling, Network Analysis Climate & Environmental Modeling: Extreme Event Detection, Extreme Event Attribution, Extreme Value Theory, Statistical Downscaling, Human-Environment Interaction Modeling
Familiarity of Datasets	ERA5, CPC, IMERG, Merra2, CRU, CHIRPS, CHIRTS, ISIMIP, DAMIP, CMIP6, CORDEX, Global Circulation Models, Impact Models
Research Publications	1. Dhakal M, Ullah A, Pandey S, Khanal SN, Kafle KR, Yadav A and Saeed F (2026) Climate-induced Loss and Damage in Nepal: Attribution Analysis and Institutional Readiness for International Support. Frontiers in Climate. 8:1782991. doi: 10.3389/fclim.2026.1782991 2. Mariam Zachariah, Fahad Saeed, Ben Clarke, Joyce Kimutai, Sumayya Ijaz, Khadija Irfan, Atta Ullah, Anwar Sadad, Israr Ahmad, Irfan Ur Rashid, Roop Singh, Maja Vahlberg, Cornelia Scholz, Nick Julien Baumgart, Emmanuel Raju, and Friederike Otto, Climate Change Intensified Heavy Monsoon Rain In Pakistan, Exacerbating Urban Floods That Impacted Highly Exposed Communities, Scientific Report in World Weather Attribution, 2025. 3. Tom Matthews, Emma E. Ramsay, Fahad Saeed, Steven Sherwood, Ollie Jay, Colin Raymond, Nerilie Abram, Jason Kai Wei Lee, Shanta Barley, Sarah Perkins Kirkpatrick, Mariam Saleh Khan, Katrin J. Meissner, Callum Roberts, Dileep Mavalankar, Kenneth G. C. Smith, Atta Ullah, Anwar Sadad, Victoria Turner & Andrew Forrest, Humid Heat Exceeds Human Tolerance Limits and Causes Mass Mortality, Journal of Nature Climate Change, 2025.

4. **Atta Ullah.**, Rabeeh Ayaz Abbasi, Akmal Saeed Khattak and Anwar Said., *Identifying Misinformation Spreaders: A Graph-Based Semi-Supervised Learning Approach*. arXiv preprint arXiv:2303.03704. (Workshop preceding's) 2023
5. **(EGU Abstract)- Saeed, F., Ullah, A., Sadad, A., Saleh Khan, M., and Guerra, M.:** From Lethal Heat to Invisible Deaths: Physiological Impact Attribution of Extreme Humid Heat in Karachi, Pakistan, EGU General Assembly 2026, Vienna, Austria, 3–8 May 2026, EGU26-19826, <https://doi.org/10.5194/egusphere-egu26-19826>, 2026.
6. **(EGU Abstract)- Ullah, A., Sadad, A., Saleh Khan, M., and Saeed, F.:** When Faith Meets Heat: Climate Change Risks During the Hajj Pilgrimage, EGU General Assembly 2026, Vienna, Austria, 3–8 May 2026, EGU26-21325, <https://doi.org/10.5194/egusphere-egu26-21325>, 2026.
7. **(EGU Abstract)- Ijaz, S., Ullah, A., Ahmad, R., Khan, M. S., and Saeed, F.:** Historical Evidence of Compound Heatwave and Extreme Precipitation in Pakistan, 1980-2024, EGU General Assembly 2026, Vienna, Austria, 3–8 May 2026, EGU26-21490, <https://doi.org/10.5194/egusphere-egu26-21490>, 2026.

**Under
Review and
Ongoing
Studies**

1. Fahad Saeed, **Atta Ullah** Mariam Saleh Khan, Anwar Sadad, *Attribution of 2022 Extreme Flooding in Sindh Pakistan, Climate Detection and Attribution*, 2024.
2. Fahad Saeed, Mariam Saleh Khan, Anwar Sadad, **Atta ullah**, *Assessment of 2024 Humid Heat Stress in Karachi Incorporating Human Physiological Survivability Limits*, 2025.

References

Dr. Fahad Saeed, Chief Executive Officer
Weather and Climate Services (Pvt.) Ltd., Islamabad, Pakistan.
Regional Climate Scientist at Climate Analytics, Germany
Email: fahad.saeed@climateanalytics.org
Portfolio: <https://climateanalytics.org/team/fahad-saeed>

Prof. Dr. Rabeeh Ayaz Abbasi, MPhil (MS) Dissertation Supervisor
Tenured professor and head of department, Department of Computer Science, Quaid-i-Azam University, Islamabad, Pakistan.
Email: rabbasi@qau.edu.pk
Portfolio: <https://rabeehabbasi.github.io/>

Dr. Anwar Said, MPhil (MS) Dissertation Co-Supervisor
AI Research Scientist, Institute for Software Integrated Systems, Department of Computer Science, Vanderbilt University, Nashville, TN, USA.
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