Mohd Zuhair, PhD

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SKILLS

- **Programming & Tools**: Python, SQL, MATLAB, Git, Docker, Linux Shell Scripting, C++

- **Statistical Modeling**: Bayesian Statistics, Monte Carlo Simulation, Sensitivity Analysis, Inverse Problems.

- **Data Visualization**: Data ETL, Matplotlib, Seaborn, Plotly, Datawrapper, Power BI, Streamlit

- **Machine Learning**: Regression (Linear/Non-linear, Bayesian, Polynomial Chaos), Classification, Clustering, Time Series Analysis, Neural Networks, Predictive Modelling

- **Verbal and Written Communication**: 7+ years of experience as a writing tutor; successful proposal writer on funded projects totaling over $2 million; 5+ papers published in peer-reviewed journals; 10+ conference presentations; 400+ undergraduate students taught in introductory environmental and climate sciences courses

SELECTED EXPERIENCE

Nanyang Technological University (NTU) — Singapore
Research Fellow in Data Science — *July 2023 - Present*

- Developed data-driven quantitative solutions to enhance infrastructure resilience by designing forecast models integrating GNSS satellite and earthquake data, enabling optimized resource allocation and predictive maintenance strategies, saving $20 million in hazard-prone regions.

- Optimized geotechnical and structural designs in hazard-prone areas by leveraging advanced statistical modelling of large geological and geospatial datasets, achieving a 20% reduction in material usage, operational costs, and environmental impact.

- Other works: Mentored 10+ junior colleagues, Algorithm development, Organized 5+ workshops to brainstorm new ideas and techniques for client engagement and business opportunities.

Monash University — Melbourne, Australia
Doctoral Researcher — *Jan. 2018 - April 2023*

- Designed and developed a geospatial data platform using ArcGIS for earthquake hazard assessment, integrating seismic, geological, and demographic data to generate risk scores and geospatial models that informed policy-making and strategic infrastructure planning in hazard-prone regions.

- Managed end-to-end Geo-Data Science projects, including assessment, solution strategy, timeline management, and execution, successfully delivering 5+ projects that secured over $1.5 million in research funding and contributed to the university's academic and research excellence.

- Developed and deployed robust machine learning models for seismic data analysis, integrating geophysical and geospatial datasets to perform classification and regression tasks, effectively quantifying physical risks associated with earthquake hazards.

LEADERSHIP & SERVICE

Chair — NTU Singapore
Post-doc Diversity & Inclusion Committee — *Nov. 2023 - Present*

- Co-organize yearly diversity forums in which university administrators listen to and discuss postdoctoral concerns with work-life balance, diversity, and inclusion.

- Successfully advocated for formalized paid time-off and support groups to support human flourishing for postdoctoral employees.

Co-Chair — Monash University
Monash Earth Science Association — *July 2018 - Aug. 2022*

- Designed and disseminated multiple surveys on graduate student climate and finances to support human flourishing for graduate student employees in the Earth, Environment, and Climate department.

- Implemented departmental improvements with collaboration from faculty and administrative staff.

- Organized and moderated multiple professional development panels and recruitment talks.

EDUCATION

- Ph.D. (Geophysics) - Monash University, Australia — Jan. 2018 – Aug. 2022

- Master of Technology (Exp. Geosciences) - I.I.T Kharagpur, India — July. 2014 – May. 2016

- Master of Science (Geology) - I.I.T Kharagpur, India — July. 2012 – May. 2014

- Bachelor of Science (Geology) - A.M.U, India — July. 2009 – May. 2012