## Subhankar Ghosh

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RESEARCH FOCUS Generative AI, Spatial Statistics, Machine Learning, Data Mining, Anomaly Detection

EDUCATION University of Minnesota, Twin Cities 2019 - 2025

Ph.D. Candidate in Computer Science

Advisor: Prof. Shashi Shekhar

University of Minnesota, Twin Cities

MS in Computer Science

APPOINTMENTS University of Minnesota Twin Cities, MN 2018 - Present

Graduate Research & Teaching Assistant

Oracle Bengaluru, India 2015 - 2017

Software Test Engineer

Relevant Project: Statistically Significant Regional/Taxonomy-aware Co-location Pattern Detection
Project: Statistically Significant Regional/Taxonomy-aware Co-location Pattern Detection
• Analyzed location patterns of retail establishments in MN using Safegraph POI dataset

• Proposed an approach for mining statistically significant regional co-location patterns

that reduce spurious pattern detection
• Proposed an approach to address multiple comparisons problem & reduce Type-I errors.

Project: Reducing Uncertainty in Sea-level prediction using Spatial-variability aware models

• Analyzed historical sea-level data from CMIP-6 simulation models.

• Proposed a spatial-variability aware model to improve regional sea-level prediction

• Proposed a new framework to combine a generative model with geostatistical techniques for improved climate downscaling.

SELECT PUBLICATIONS [1] Towards Kriging-informed Conditional Diffusion for Regional Sea-Level Data Downscaling. Subhankar Ghosh et al. In 32nd ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL 2024)

[2] Towards Statistically Significant Taxonomy Aware Co-location Pattern Detection. **Subhankar Ghosh et al.** In 16th Conference on Spatial Information Theory (COSIT), 2024.

[3] Reducing False Discoveries in Statistically-Significant Regional-Colocation Mining: A Summary of Results. Subhankar Ghosh et al. In 12th International Conference on Geographic Information Science (GIScience 2023)

[4] Reducing Uncertainty in Sea-level Rise Prediction: A Spatial-variability-aware Approach. Subhankar Ghosh et al. In I-GUIDE Forum, 2023

[5] Physics-based Abnormal Trajectory Gap Detection. Arun Sharma, **Subhankar Ghosh**, Shashi Shekhar. In Transactions on Intelligent Systems and Technology (TIST), 2024

TEACHING EXPERIENCE

CSCI 5715 Spatial Data Science

CSCI 5511 - Artificial Intelligence I

CSCI 1933 Introduction to Data Structures and Algorithms

Graduate Teaching Assistant

Service Reviewer

SIGSPATIAL, SSTD, AGILE, Geoinformatica