



TEXAS A&M
Institute of
Data Science

Seminar Series



Dr. Yichun Xie

Director of the Institute for Geospatial Research and Education
Eastern Michigan University

Yichun Xie, PhD, Professor of Geographic Information Science; Director and Founder, Institute of Geospatial Research and Education at Eastern Michigan University. Dr. Xie has long been engaged in geographic information science and urban modeling research, including spatiotemporal modeling of urban growth, total socio-environmental systems (TSES), coupled impacts of human dynamics and environmental changes on ecosystem sustainability, and land-use and land-cover changes. Professor Xie is one of the pioneers in developing urban dynamic evolution theory based on cellular automata.

Professor Xie has substantial experience in research and scholarly publication. He has authored, co-authored, and edited 12 books and special issues. The most recent monograph is Total Socioenvironmental Systems: An Analytical Framework for Human-Natural Interactions and Sustainability, published in 2023 by Springer, in which he presents total socioenvironmental analytical frameworks to examine climatic, ecological, and socioeconomic interactions, develops

Modeling grassland deterioration from the interactions of climate, land use, and socioeconomic changes at multiple scales

The presenter has developed an analytical framework of Total Socio-environmental Systems (TSES) to examine human-natural interactions and sustainability. TSES advocates three analytical toolsets: 1) synchronizing environmental and socioeconomic data in temporal dimensions, 2) assimilating (areal interpolating) environmental and socioeconomic data onto compatible spatial units, and 3) exploring statistical, deep-learning, and AI-based methods to analyze the spatiotemporally unified datasets for seeking a better understanding of socio-environmental sustainability concerns. The seminar will discuss fundamental principles and algorithms for temporal synchronization, spatial assimilation, and synthetic modelling approaches.

Date:
October 14, 2024

Time:
2:00 - 3:00 pm

Location:
Blocker 220 and
Zoom

Faculty host:
Dr. Xinyue Ye,
Director of TAMIDS
Urban AI Lab

Contact:
Delany Baum
delany_baum@tamu.edu

Zoom ID:
974 9688 4861
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