NARSC 2023
Call for Submissions

Special Sessions on
Machine Learning in Regional Science:
Perspectives, Methods, and Applications

Machine learning (ML) and deep learning (DL) approaches are increasingly being used across the social sciences to answer questions related to transportation, urbanisation, housing, neighborhood change, and economic development. And while earlier iterations of these methods focused primarily on predictive outcomes, recent cutting-edge extensions of these approaches are now being used to assess problems of causal inference, explicitly integrate spatial information, and provide insight into the explanatory relationships driving model results.

The purpose of this session - which is a continuation of a series from 2020, 2021, and 2022 - is to spur a wide-ranging conversation about the usefulness and applicability ML and DL methods in regional science and to serve as a showcase for work that develops new causal, spatially-explicit, or explanatory methods or uses these techniques in innovative applications. We welcome papers from across the disciplinary spectrum that employ ML or DL techniques or discuss the development or approaches to data science as it relates to regional science more broadly, on topics including but not limited to:

- Development or use ML and DL methods for regional science applications, e.g., regional economic development, entrepreneurship, transportation, housing, spatial interaction, urban form, population growth, neighborhood change, etc.
- Development or use of causal or explanatory ML methods, e.g., causal forests (CF), deep gravity models, or feature learning approaches
- Use of new visualization methods for non-linear relationships in ML models, e.g., partial dependence (PD) and accumulated local effects (ALE) plots
- Integration of spatial data or approaches into predictive ML or DL models, e.g., convolutional neural networks (CNN)
- Methods for optimizing spatial pattern prediction or the development of new indicators of spatial association

If you are interested in presenting your research in this special session, please submit an abstract (2,000 to 5,500 characters and spaces) through the conference portal. Information on how to do that can be found here. Upon submitting your abstract, you will receive an abstract ID number (e.g., P12345). Please send your abstract ID number and a copy of your abstract (with name, email, and affiliation for all authors to Kevin Credit at kevin.credit@mu.ie or Isabelle Nilsson at inilsso1@uncc.edu no later than July 3, 2023.

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