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Modelling Heterogeneity in Regression for Clustered Spatial Dependent Data

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Brief Description

With the development of geographic software, satellites and remote sensors, spatial data from large regions are increasingly being collected.

In this presentation, we focus on the application of a Bayesian Geographically Weighted Regression model for exploring spatial non-stationary regression relationships in such data.

We address some of the computational challenges of current implementations of this model, expand the utility of the method to allow for both continuous and categorical explanatory variables, and include an additional clustering capability via a Gaussian mixture model and a Dirichlet process.

The approach is applied to a substantive case study on children's development domains in Queensland, using real data from the Children's Health Queensland and the Australia Early Development Census.This presentation will be delivered by Wala Areed from the Queensland University of Technology (QUT), Australia.

Abstract

With the development of geographic software, satellites and remote sensors, spatial data from large regions are increasingly being collected. In this presentation, we focus on the application of a Bayesian Geographically Weighted Regression model for exploring spatial non-stationary regression relationships in such data. We address some of the computational challenges of current implementations of this model, expand the utility of the method to allow for both continuous and categorical explanatory variables, and include an additional clustering capability via a Gaussian mixture model and a Dirichlet process. The approach is applied to a substantive case study on children's development domains in Queensland, using real data from the Children's Health Queensland and the Australia Early Development Census.

This presentation will be delivered by Wala Areed from the Queensland University of Technology (QUT), Australia.