

Introduction to Gaussian Processes with Applications to Spatial Data

Presented by Matthew Kupilik



Abstract: Current neural network techniques are solving many challenging problems in artificial intelligence and social systems. They have significant potential in many engineering applications but are limited due to their near impenetrable black box form. This seminar provides a gentle introduction to Gaussian Processes which have many similar advantages to neural networks but provide uncertainty and insight into the physical process being modeled through their kernel function. Traditionally used for interpolation (kriging) recent advances have vastly reduced the computational complexity of Gaussian processes and they now provide a viable method for prediction on large data sets. We will discuss several examples applied to spatial and lower dimensional data sets and the current tools available.

Presenter Bio: Matthew Kupilik is currently an Assistant Professor of Electrical Engineering at the University of Alaska Anchorage. His research interests lie in the identification of dynamic systems and their applicability to model based control. He obtained his BSc in Engineering Systems, MSc in Electrical Engineering, and PhD in Electrical Engineering all from the Colorado School of Mines.

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