

Graduate Mathematics Seminar

Analysis and Prediction of Sales Data Using Parametric and Non-Parametric Methods

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Abstract: This research is based on the time series, taken from Shaun Bythell's book *The Diary of a Bookseller*. The book describes a year of life of Scotland's largest bookshop, owned by the author. The purpose of this research is to build a model which estimates sale amounts on certain dates to predict data for the festival period and determine how the profit has changed in comparison to the regular days. In the first part of the work were built two parametric regression models using the least squares method. The models are different only by inclusion/exclusion of the intercept (β_0), but the coefficients of determination of the models differentiate more than twice. The second part built a non-parametric model based on Nadaraya-Watson regression estimation. Since we observe sales data on weekdays and Saturdays, it can be seen that the sales amount varies based on the day it was captured.

When: Monday, May 3, 2021, 6:00 – 7:00 pm

Where: Zoom