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MASTER'S THESIS PRESENTATION

An Application of Isotonic Regression in Distribution-Free Record Series Analysis

WHEN

May, 12th, 2021
10:45 AM, CDT

WHERE

Via ZOOM

ZOOM information will be provided in the email announcement for this seminar.

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In a time series, an observation is a (upper) record if its value is greater than all previous values. As the most retrievable values of a time series, records are encountered not only in the book Guinness World Records, but also in climate research, epidemiology, and stock price analysis. One popular model in record theory is the Yang-Nevezorov model, which assumes that the records come from a pool of independent, identically distributed candidates where each candidate has a certain probability of becoming a record. The original model assumed no particular distribution on individual candidates, but had a parameterized representation of the population size over time. In this work, we intend to relax this constraint and only require the population size to be a nondecreasing series. We then use isotonic regression and projected gradient descent to fit the nonparametric model.

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