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Webinar Series



TEXAS A&M UNIVERSITY

Statistics

JAMES E. GENTLE

University Professor of Computational Statistics

George Mason University



NONPARAMETRIC SMOOTHING OF TIME SERIES: PATTERNS AND CHANGEPOINTS

ABSTRACT:

Many financial and economic time series do not follow simple models. It is nevertheless of interest to analyze and smooth such time series data. Motivated by general observations of stock price data, we assume that price movements have an inertia, that is, they tend to continue in their current state of motion. Other than that, we make minimal assumptions about the data-generating process. In particular, we do not attempt to model the momentum or the forces that change that momentum, such as autoregressive or moving-average effects. The approach is piece-wise linear smoothing that we call alternating-trend smoothing (ATS). We identify various patterns resulting from ATS, and investigate their predictive value. Empirical studies of stock price data indicate, however, that externalities and general system noise generally dominate the system inertia.

BIO: James Gentle received his PhD in Statistics from Texas A&M University under the supervision of H.O. Hartley. He is also an H.O. Hartley Award recipient. His interests include computational statistics, simulation, robust statistics, survey sampling, and computational finance. He has been a major professor for 22 PhD students in these areas at Iowa State University and George Mason University. His most recent book is in the area of computational finance, Statistical Analysis of Financial Data with Examples in R.

He is active in the American Statistical Association, especially the Statistical Computing Section and the Statistical Graphics Section. He has been Chair of the Graphics Section, and has held all of the offices of the Statistical Computing Section over the past quarter century.

He is Co-Editor-in-Chief (with David Scott) of Wiley Interdisciplinary Reviews: Computational Statistics, and also a Senior Editor of Communications in Statistics.

Wednesday, March 3, 2021

1:00 PM - 2:00 PM, CST

Online webinar only. No meeting room.

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