TEXAS TECH UNIVERSITY
Edward E. Whitacre Jr.
College of Engineering™
Computer Science

Multivariate time series Analysis

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Tuesday, April 21, 2020 at 3:30 p.m.

Please join us through Blackboard Collaborate Ultra: spring 2020 TTU Computer Science Grad Seminar (CS-5120-001, 002, & D01) a course content a Blackboard Collaborate Ultra or you can join directly via the guest link clicking https://us.bbcollab.com/guest/7f110ae9b00d463fbb5ece9832d4eeb6

Abstract:

Multivariate time series data is expanded on three dimensions: t time points, p variables, and n series. This type of data is increasingly popular and can be found in various application domains. For the monthly US employment data over 30 years, we have n=50 states, p=30 economy factors, and t=360 months. Soil survey is collected on thousands of sites, measuring 32 chemical elements (such as Ca, Al, or Fe), and these measurement concentrations change daily. In this talk, I will present different visualization and interaction techniques for analyzing multivariate time series. The 467-node Quanah cluster at TTU is used as a case study for this analysis, but the proposed visualizations have more general implications to other applications, such as gene expression data analysis and aircraft component monitoring.

Bio:

Dr. Tommy Dang is an Assistant Professor of Computer Science at Texas Tech University, where he directs the interactive Data Visualization Lab (iDVL). His research on big data visualization and visual analytics has appeared in Computer Graphics Forum and IEEE Transactions on Visualization and Computer Graphics and has been presented at IEEE Information Visualization, IEEE Visual Analytics Science and Technology, EG/VGTC Conference on Visualization, among others. The mainstream of his research is on visual features (or Scagnostics) for analyzing the pairwise correlation of multivariate data. Working directly with these measures, his research was able to locate anomalous or interesting subsets of variables/sub-series for massive, dynamic, and high dimensional data in scientific and social applications. He also has special interests and skills on 3D modeling, computer animation, and virtual reality. Dr. Dang has previously been a post-doc on a DARPA-funded project on biological network visualization at the Electronic Visualization Lab at the University of Illinois at Chicago which focuses on advanced virtual reality, notably the CAVE2™ hybrid reality environment and the SAGE2™ scalable amplified group environment.