Dr. Dennis K. J. Lin

Department of Statistics, Purdue University, West Lafayette, IN, USA

Thursday, September 1, 2022 - 4:00pm

Location | Brooks Hall, Room 0145

Registration Fee: $15 for Statistics Club Members, $25 for non-members

Ghost Data

As natural as the real data, ghost data is everywhere—it is just data that you cannot see. We need to learn how to handle it, how to model with it, and how to put it to work. Some examples of ghost data are (see, Sall, 2017):

(a) Virtual data—it isn't there until you look at it;

(b) Missing data—there is a slot to hold a value, but the slot is empty;

(c) Pretend data—data that is made up;

(d) Highly Sparse Data—whose absence implies a near zero, and

(e) Simulation data—data to answer "what if."

For example, absence of evidence/data is not evidence of absence. In fact, it can be evidence of something. More Ghost Data can be extended to other existing areas: Hidden Markov Chain, Two-stage Least Square Estimate, Optimization via Simulation, Partition Model, Topological Data, just to name a few.

Three movies will be discussed in this talk: (1) "The Sixth Sense" (Bruce Wallis)—I can see things that you cannot see; (2) "Sherlock Holmes" (Robert Downey)—absence of expected facts; and (3) "Edge of Tomorrow" (Tom Cruise)—how to speed up your learning (AlphaGo-Zero will also be discussed). It will be helpful, if you watch these movies before coming to my talk. This is an early stage of my research in this area--any feedback from you is deeply appreciated. Much of the basic idea is highly influenced via John Sall (JMP-SAS).

· About the Speaker ·

Dr. Dennis K. J. Lin is a Distinguished Professor and Head in the Department of Statistics at Purdue University. Prior to his current job, he was a University Distinguished Professor of Supply Chain Management and Statistics at Penn State. His research interests are quality assurance, industrial statistics, data mining, and response surface. He has published more than 250 SCI/SSCI papers in a wide variety of journals. He currently serves or has served as an associate editor for more than 10 professional journals and was a co-editor for Applied Stochastic Models for Business and Industry. Dr. Lin is an elected fellow of ASA, IMS, ASQ, and RSS, an elected member of ISI, and a lifetime member of ICSA. He is an honorary chair professor for various universities, including a Chang-Jiang Scholar at Renmin University of China, Fudan University, and National Taiwan Normal University. His recent awards include, the Youden Address (ASQ, 2010), the Shewell Award (ASQ, 2010), the Don Owen Award (ASA, 2011), the Loutit Address (SSC, 2011), the Hunter Award (ASQ, 2014), the Shewhart Medal (ASQ, 2015), and the SPES Award (ASA, 2016). He was the Deming Lecturer Award at the 2020 JSM.

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