**Abstract:**
This talk is based on a related survey/position paper on domain-specific probability definitions and stochastic models, which have been in the probability/statistics literature from 1933 to today (and in other disciplines). It concludes with the martingale approach to the evaluation of model-based probability forecasts and gives some empirical examples.

**Bio:** Tze Leung Lai is Ray Lyman Wilbur Professor of Statistics and, by courtesy, of Biomedical Data Science in the School of Medicine and of the Institute for Computational & Mathematical Engineering (ICME) in the School of Engineering. He is Director of the Financial and Risk Modeling Institute (FARM) at Stanford, Codirector of the Center for Innovative Study Design, a core member of the Stanford Comprehensive Cancer Institute, Center for Precision Mental Health and Wellness, and Center for Population Health Sciences, and Faculty Fellow with the Center for Innovations in Global Health. He is the honorary dean of the Center for Financial Technology and Risk Analytics at Fudan University and visiting chair professor at Southwestern University of Finance and Economics in Chengdu, China.