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联系单位：电子系无线通信技术研究所

Anomaly Detection in Large Data Sets

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Abstract:

Advances in data acquisition and high-dimensional information processing are rapidly transforming various technological, social, and economic domains, including the Internet, telecommunication, energy grids, social networks, and the financial sector, to name a few. The resulting data sets can be quite large, and a ubiquitous problem that arises in such applications is the detection of anomalous behavior in these data sets, which can signal either opportunities or threats, depending on the application. Although anomaly detection itself is not a new problem, its application on massive data sets requires a reexamination of this field, and thus a considerable amount of recent research has been devoted to problems of this nature. This talk will review recent results in this area, including new sequential approaches, which seek to strike balance between reliability and the cost of sensing/processing, and new nonparametric approaches, in which the statistical behavior of normal and anomalous populations is unknown a priori.

Biography:

H. Vincent Poor is the Michael Henry Strater University Professor at Princeton University, where is also Dean of the School of Engineering and Applied Science. He has held visiting appointments at a number of other universities, including most recently at Stanford and Imperial College. His research interests are in the areas of information theory, statistical signal processing and stochastic analysis, and their applications in wireless networks, smart grid and related fields. A Fellow of the IEEE and TWAS, Dr. Poor is also a Member of the U. S. National Academy of Engineering and the U. S. National Academy of Sciences, and a Foreign Member of the Royal Society. He received a Guggenheim Fellowship in 2002, and the IEEE Education Medal in 2005. Recent recognition of his work includes the 2014 URSI Booker Gold Medal, the 2015 EURASIP Athanasios Papoulis Award, the 2016 John Fritz Medal, and honorary doctorates from several universities in Asia and Europe.