Information Theoretic Learning:
An Approach to Signal Processing

by Dr. Babak Seyfe

Abstract:

Some of the famous information theorists such as Claude Shannon, the founder of Information Theory, and Robert Fano, believed that this theory is proposed for the transmission of information and then for more than four decades the main applications of the theory was for communication technologies.

But in the mid of 1970 some other applications of information theory as well as classifications, model selection and signal processing appeared in the literature. The terminology of Information Theoretic Learning (ITL), perhaps first used by Watanabe in the 1970s and also coined by others in the context of adaptive systems training.

In this talk we try to consider some aspects of ITL and some of its modern applications in signal processing and biomedical engineering will be presented.

About the speaker:

Dr. Babak Seyfe received the B.Sc. degree from the University of Tehran, Tehran, Iran, and the M.Sc. and Ph.D. degrees from Tarbiat Modares University, Tehran, Iran, all in electrical engineering in 1991, 1995, and 2004, respectively. He is associate professor at the Department of Electrical Engineering, Shahed University, Tehran, Iran and the director of Information Theoretic Learning System Laboratory (ITLSL) at that department.

Prior to this, he was with the Centre for Digital Signal Processing Research at King's College, London, U.K in 2006. He was with the Department of Electrical and Computer Engineering, University of Toronto, Toronto, Canada, as a Visiting Researcher in 2002. His research interests are detection and estimation theory, statistical signal processing, communication theory, robust and nonparametric statistics, and information theoretic learning.

Location

Workshop venue: Iran Telecommunication Research Center (ITRC), North Kargar st., Tehran, Iran.

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