IEEE Signal Processing Society, Gujarat Chapter

Jointly with

Institute of Technology, Nirma University, Ahmedabad

cordially invites you to the expert lecture under

Distinguished Lecture Programme on

'Optimal Multichannel Signal Enhancement'

By Dr. Israil Cohen, Professor, Electrical engineering at the Technion – Israel Institute of Technology, Haifa, Israel

Date: Monday, March 09, 2020

Venue: A-101, A-Block, Nirma University Campus

Time: 02:00 to 04:00 pm

Abstract of the Talk:

An array consists of a set of sensors positioned at known locations with reference to a common point. The sensors collect signals from sources in their own field of view and the output of each sensor is composed of these source components as well as noise. By processing the sensors' outputs, two groups of functionalities can be achieved: estimation of important parameters of sources and enhancement of some signals of interest. The focus of this talk is on the signal enhancement problem with the use of sensor arrays. Multichannel signal enhancement is a process to either restore a signal of interest or boost the relevant information embedded in the signal of interest and suppress less relevant information from the observation signals. This problem lies at the heart of many fundamental applications such as hands-free voice communications, sonar, radar, ultrasound, seismology, autonomous cars, robotics, etc. In this talk, we address the multichannel signal enhancement in the time and frequency domains, define performance measures, derive optimal array processing filters, and show their close relations.

Bio Sketch of Dr. Israil Cohen:

Israel Cohen is a Professor of electrical engineering at the Technion - Israel Institute of Technology, Haifa, Israel. He is also a Visiting Professor at Northwestern Polytechnical University, Xi'an, China. He is an IEEE Fellow "for contributions to the theory and application of speech enhancement", and Distinguished Lecturer of the IEEE Signal Processing Society. He received the B.Sc. (Summa Cum Laude), M.Sc. and Ph.D. degrees in electrical engineering from the Technion - Israel Institute of Technology, in 1990, 1993 and 1998, respectively.

From 1998 to 2001, he was a Postdoctoral Research Associate with the Computer Science Department, Yale University, New Haven, CT, USA. In 2001 he joined the Electrical Engineering Department of the Technion.

He is a coeditor of the Multichannel Speech Processing Section of the Springer Handbook of Speech Processing (Springer, 2008), and a coauthor of Fundamentals of Signal Enhancement and Array Signal Processing (Wiley-IEEE Press, 2018).

He was awarded the Norman Seiden Prize for Academic Excellence (2017), the SPS Signal Processing Letters Best Paper Award (2014), the Alexander Goldberg Prize for Excellence in Research (2010), and the Muriel and David Jacknow Award for Excellence in Teaching (2009).

He served as Associate Editor, IEEE Transactions on Audio, Speech, and Language Processing (2004-2007); Associate Editor, IEEE Signal Processing Letters (2004-2008); Member, Audio and Acoustic Signal Processing Technical Committee (2012-2017); and Member, Speech and Language Processing Technical Committee (2013-2015).

His research interests are array processing, statistical signal processing, deep learning, analysis and modeling of acoustic signals, speech enhancement, noise estimation, microphone arrays, source localization, blind source separation, system identification and adaptive filtering.

For More detail resume of the speaker, you can visit his home page link- https://israelcohen.com/

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