NJIT Electrical Engineers Feature Talks on MIMO Radar, Optical-OFDM

NJIT's Center for Wireless Communications and Signal Processing Research showcased earlier this week the research of six doctoral students. The students' work was featured in presentations and displayed posters. The annual event gives doctoral students and their professors a chance to exchange information from a year's worth of work. The Center is located in the department of electrical and computer engineering at NJIT's Newark College of Engineering.

Six presentations focused on the field's newest technology. They were "Spatial Compressive Sensing in MIMO Radar with Random Arrays" (Marco Rossi with advisor Ying Wu Endowed Chair and Professor Alexander Haimovich); "Dependence of Functional Vulnerabilities on the Parameters of the Caspase Molecular Network" (Iman Habibi with advisor Professor Ali Abdi); "Space Frequency Coding for Optical Wireless Communications Using DQO-SCFDE" (Nan Wu with advisor Distinguished Professor Yeheskel Bar-Ness).

More presentations were: "L-shaped Vector System and Comparison with Full-Scalar System" (Chen Chen with Abdi); "Modulation Classification of MIMO-OFDM Signals by Independent Component Analysis and Support Vector Machines" (Yu Liu with Haimovich); "A New Improved-Performance Decoding Technique for Asymmetrically-Clipped Optical-OFDM" (Eyal Katz with Bar-Ness).

Established in 1985, the Center focuses on communication theory. Its main areas of research are CDMA and spread spectrum systems, multi-carrier modulation, ultra-wideband communications, MIMO systems, space-time codes and turbo-codes, information theory, and adaptive signal processing.

Center members are noted experts in this field. Recent publications include, "Spectrum Leasing via Cooperation with Multiple Primary Users," IEEE Transactons. Vehicular Technology, February, 2012 by T. Elkourdi and Osvaldo Simeone.

"Instantaneous Mutual Information and Eigen-Channels in MIMO Mobile Rayleigh Fading," Information Theory, IEEE Transactions, January, 2012 by S.Wang and Ali Abdi.

Last month, US Patent #8,130,846 "Single Carrier Space Frequency Block Coded Transmission over Frequency Selective and Fast Fading Channels," NJIT case # 07-036, was awarded to Bar-Ness.

New Jersey Institute of Technology [1]

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