Collaborative Data Collection and Some Findings on Driver Behavior

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In this talk, we will present collaborative and coherent data collection activities and some research findings from the real-world driver, vehicular, road and traffic data collected with "UYANIK in Istanbul ," as well as through efforts in Nagoya and in Dallas for the project called UTDrive. The models of driver behavior under normal and distracted driving conditions can be used to create improved human-machine interactive systems. Towards that end, in three sites more than 30 Terabytes of driver behavior, vehicular, and road data has been collected from more than 450 drivers on routes consisting of both city roads and highway in Istanbul (Turkey), Nagoya (Japan), and Dallas (USA). Both the experience gained and the preliminary results from still on-going studies using this multi-mode multi-language corpus are very encouraging and some of which will be introduced as sample applications.

The models of driver behavior under normal and distracted driving conditions can be used to create improved human-machine interactive systems and to reduce vehicle accidents on the road. New technologies and services are eminent towards personalization of vehicles, mobile transactions and info-tainement.

About the speaker:

Hüseyin Abut is Professor Emeritus from Electrical and Computer Engineering at San Diego State University, where he has served as a FERP professor 2006 and a full-professor and director between 1981 through 2001. He has also held visiting faculty appointments in Turkey, Japan, Singapore, Germany, and Stanford University. He served as the VP for Research and Development of a high-tech company in 1980s, was the President of one and the TCO of yet another high-tech start-up both in the US and abroad. He served as the director of an academic research facility for more than twenty years and was the interim associate dean for research. In 2006-2007, he was involved with the establishment of a foundation university in Turkey at the capacity of board of trustee, and now is involved with the foundation of another new university. He has served twice at the capacity of Senior Advisor for the U.N. Programme Development.

 He is the editor or co-editor of four books: *Vector Quantization* from IEEE Press (1990), *DSP in Mobile and Vehicular Systems* from Springer, Science-Business (2005), *Advances for In-Vehicle and Mobile Systems: Challenges for International*

*Standards*from Springer, Science-Business (2007) and *Corpus and Signal Processing for Driver Behavior* also from Springer, Science-Business (available in November 2008).

He is the author/co-author of more than 100 publications in journals, books, and book chapters in the field of speech processing, speaker verification, image processing, image understanding, biometrics, and signal processing for vehicular applications and driver behavior. He holds two patents on Speaker Verification Systems for Consumer Applications.

He has served as a founding associate editor for the IEEE Transactions on Speech and Audio Processing. He was a Distinguished Lecturer (Class of 2002) for the IEEE Signal Processing Society. He has been associated with numerous international workshops, biennials, and conferences including nine ICASSP Meetings –General Chair 2000, two speech coding workshops, general chair of three biennials on DSP for In-Vehicle and Mobile Systems (DSPINCARS) and one called Special Workshop in Maui (SWIM) in honoring nine masters in speech processing. He served in many capacities as member, secretary, board member and senator in the academic and professional organizations including the IEEE Signal Processing Society.