



**The Institute of Electrical and Electronics Engineers
(IEEE)**



Galveston Bay Section Meeting

Organized by Communication Society and Joint Societies Chapters

September 19th, 2018 (Wednesday) Luncheon Meeting

TOPIC: "Development of an efficient addressing scheme by hexagonal sampling of 3D datasets"

SPEAKER: Dr. Unal "Zak" Sakoglu, University of Houston Clear Lake

PRESENTATION: It has been long known that there are advantages to sampling images hexagonally rather than rectangularly. Recently, an efficient indexing scheme for hexagonal 2D grids, namely array set addressing (ASA), was already developed. ASA provides improved efficiency of basic signal processing operations such as array arithmetic, convolution, downsampling and Fourier Transform. An efficient addressing scheme for hexagonal 3D grids, or a 3D extension of ASA (ASA-3D) will provide even better efficiency than the traditional cubical 3D grids, albeit it comes with challenges. The topic of this talk will provide challenges and improvements in the development of the ASA-3D scheme.

SPEAKER: Dr. Unal "Zak" Sakoglu is currently an Assistant Professor of Computer Engineering at University of Houston - Clear Lake. He had his BS in Electrical-Electronics Engineering from Bilkent University, and MS & PhD degrees in Electrical and Computer Engineering from University of New Mexico (UNM). His graduate research involved developing signal/image processing and non-uniformity correction algorithms for better multispectral classification with infrared array sensors developed at UNM's Center for High Technology Materials. He did his post-doctoral training at UNM Neurology Department BRAIN Imaging Center, and Mind Research Network in Albuquerque, where he developed and applied data analysis & classification techniques to functional magnetic resonance imaging data. Subsequently, he worked as Research Scientist at University of Texas - Southwestern Medical Center Neuroradiology Department, at Abbott Laboratories Translational Neuroimaging Group, and University of Texas - Dallas School of Behavioral and Brain Sciences, where he analyzed different modalities of medical imaging data such as EEG, PET/CT, SPECT/CT, MRI and fMRI, during these positions. He is currently working on development and application of dynamic multivariate pattern classification, data-mining and machine-learning methods to functional neuroimaging data in order to advance the understanding of how the human brain is functioning and how it is effected by different conditions; including an ongoing neuroimaging data analysis project on Gulf War Illness. He also continues his research interests in fundamental signal and image processing, remote sensing, optimal data sampling, and signal/data analysis. His research has been funded by US AFOSR/AFRL, US DoD, and also by the industry.

Gilruth Recreation Center NASA-JSC, Discovery Room (downstairs)

Free parking. No security processing required. Easy drive in off Space Center Blvd. See website below for map. Interested non-IEEE engineers, technicians, scientists, IEEE Members and guests alike are welcome!

12:00 PM – 1:00 PM - Program and Q&A

11:30 AM - Light Lunch with reservation (\$10.00 donation). Complimentary for IEEE student members with reservation. INDICATE IF YOU TAKE VEGGIE ONLY.

Please RSVP Before Noon Monday September 16th, 2018

Number of lunches is limited. Please reserve early

Reservations for lunch or to attend this meeting should be made by email to:

d.k.rutishauser@ieee.org

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