UCF DEPARTMENT OF COMPUTER SCIENCE

CS Colloquium Talk

RECONSTRUCTING HDR IMAGES OF COMPLEX DYNAMIC SCENES

Tuesday February 07, 2017 ● 3:30 PM– 4:30PM ● HEC 356

Reconstructing high dynamic range (HDR) images of a complex scene involving moving objects and dynamic backgrounds is prone to artifacts. A large number of methods have been proposed that attempt to alleviate these artifacts, known as HDR deghosting algorithms. Currently, the quality of these algorithms are judged by subjective evaluations, which are tedious to conduct and get quickly outdated as new algorithms are proposed on a rapid basis. In this paper, we propose an objective metric which aims to simplify this process. Our metric takes a stack of input exposures and the deghosting result and produces a set of artifact maps for different types of artifacts. These artifact maps can be combined to yield a single quality score. We performed a subjective experiment involving 52 subjects and 16 different scenes to validate the agreement of our quality scores with subjective judgements and observed a concordance of almost 80%. Our metric also enables a novel application that we call hybrid deghosting, in which the output of different deghosting algorithms are combined to obtain a superior deghosting result.

Dr. Oguz Akyuz

Associate Professor, Middle East Technical University

Dr. Oguz Akyuz is an Associate Professor at the Department of Computer Engineering in Middle East Technical University. He received his PhD in Computer Science from UCF under the direction of Dr. Erik Reinhard. He is a co-author of the book, Color Imaging: Fundamentals and Applications (https://www.amazon.com/Color-Imaging-Fundamentals-Erik-Reinhard/dp/1568813449). His primary research focus is on high dynamic range (HDR) imaging with an emphasis on color and perception..

Hosted by: Dr. Charles E. Hughes