

Multi-Sensor Image and Video Fusion Research Activities at the University of Bristol

Stavri Nikolov¹, John Lewis¹, Tim Dixon², Jian Li², Eduardo Canga¹, Artur Loza¹, Nele Cvejic¹, Nishan Canagarajah¹, Dave Bull¹, Tom Troscianko², Jan Noyes²

¹Centre for Communications Research, University of Bristol, UK

²Department of Experimental Psychology, University of Bristol, UK

E-mail: Stavri.Nikolov@bristol.ac.uk

Abstract

In this talk various multi-sensor image and video fusion research activities conducted at Bristol University, UK, in the last 4-5 years will be presented. A lot of this research was done in the broader context of the UK Data and Information Fusion Defence Technology Centre (DIF DTC). After a brief introduction of the DIF DTC, and in particular the Multi Dimensional Fusion Theme in it, the talk will describe in detail results of several major studies carried out at Bristol University, including: (a) multi-sensor data gatherings; (b) multi-modal image segmentation; (c) development of novel region-based and motion-based image and video fusion techniques; (d) multi-modal image displays; (e) image fusion and video fusion assessment, and in particular the use of scanpath analysis as a new assessment framework; and (f) task-based image fusion assessment .