

Making The Most of Multi-Modal Image Fusion

Lawrence B. Wolff
Equinox Corporation
9 West 57th Street
New York, New York 10019

As an increasing number of passive imaging modalities become available so does the potential for exploiting the fusion of such information. Multi-modal image fusion systems that include at least two modalities from visible, Near-infrared (including intensified), ShortWave Infrared, and Thermal Infrared spectrums need to be designed from the standpoint of many tradeoffs such as size, weight, power and resolution but most importantly in context of the quality and application of image fusion algorithms. Many of these issues are inherent to the classical tradeoff between optical overlay fusion systems and digital fusion systems. Fusion algorithms can be designed to emphasize functionality for *visual* fusion, such as for enhancing human visual situational awareness beyond the visible spectrum, or designed for *analytic* fusion such as for enhancing the performance of automated object recognition. Experience has shown that extreme care needs to be taken in harnessing the full potential of fusing complementary phenomenology from different imaging modalities. Various aspects of this will be discussed and demonstrated.

Biography



Lawrence B. Wolff is President and CEO of Equinox Corporation one of the leading companies providing electro-optical image fusion technology to the US military. He is also a Research Faculty member in the Department of Computer Science at Johns Hopkins University. From 1990-2002 Dr. Wolff was a full time faculty member there and has published over 100 articles in books, journals, conferences, workshops and encyclopedias on aspects of physics-based computer vision and applied optics. In academia he pioneered a number of techniques applying polarization and multi-spectral measurement to computer vision. He received a PhD and MS in Computer Science from Columbia University and a BS in Mathematics and Physics from Yale University. Dr. Wolff has received a number of awards including the NSF Presidential Young Investigator award and was an Associate Editor for IEEE PAMI.

Visit: <http://www.cse.ohio-state.edu/OTCBVS/06/>

Questions? riad.hammoud@delphi.com, jwdavis@cse.ohio-state.edu