



Prof. Pierre Moulin, *IEEE Fellow*

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Topic

Action and Event Recognition Using Depth Cameras

•Abstract

The emergence of depth cameras has brought exciting new opportunities for action and event recognition. In this talk, we first introduce the Kinect camera, which collects RGB+D (color + depth) image data, and briefly overview its applications. Then we present our recent work on recognition of action and events (such as: person picks up phone, opens door, drops bag, etc.) using Kinect cameras. The algorithmic framework is based on state-of-the-art image feature representation methods, machine learning, and Bayes inference. The benefits of fusing RGB and depth information are demonstrated on a problem of early detection and prevention of falls in hospital wards. We also overview the recent HARL-ICPR competition on detection and localization of events using the Kinect camera, in which our Singapore team placed first. Finally, we overview our recent work on fine-grain action recognition, which focuses on hand/object interaction and finds applications to assisted living.

Biography

Professor Pierre Moulin received his Engineer degree from the Ecole Polytechnique of Mons, Belgium, and his doctorate from Washington University in St. Louis (1990). After working as a Research Scientist for Bell Communications Research in Morristown, New Jersey, he joined the University of Illinois as Assistant Professor (1996) and later became Associate Professor (1999) and Professor (2003) in the Department of Electrical and Computer Engineering, Research Professor in the Coordinated Science Laboratory, faculty member in the Beckman Institute's Image Formation and Processing Group, and affiliate professor in the department of Statistics. He is also a member of the Information Trust Institute and the founding director of the Center for Information Forensics, a multidisciplinary research center currently involving twenty colleagues. He is also a member of the Advanced Digital Sciences Center, a multidisciplinary research center of UIUC in Singapore. His fields of professional interest are information theory, image and video processing, statistical signal processing and modeling, decision theory, information hiding and authentication, and the application of multiresolution signal analysis, optimization theory, and fast algorithms to these areas.

He served as Associate Editor for the IEEE Transactions on Information Theory from 1996 till 1998, for the IEEE Transactions on Image Processing from 1999 till 2002, and then as Area Editor from 2002 till 2006. In 1999, he was cochair of the IEEE Information Theory workshop on Detection, Estimation and Classification. He was a Guest Editor of the IEEE Transactions on Information Theory 2000 special issue on Information Theoretic Imaging; Guest Editor of the IEEE Transactions on Signal Processing's 2003 special issue on Data Hiding; and member of the IEEE Image and Multidimensional Signal Processing (IMDSP) Society Technical Committee (1998-2003), the Information Forensics and Security (IFS) Technical Committee (2007-2010) and the Image, Video, and Multidimensional Signal Processing (IVMSP) Technical Committee (2010-present); and the Board of Governors of the IEEE Signal Processing Society (2005-2007). He was cofounder and Editor in Chief of the IEEE Transactions on Information Forensics and Security. He is a Fellow of IEEE (2003), recipient of a 1997 Career award from the National Science Foundation, and of the IEEE Signal Processing Society 1997 Best Paper award in the IMDSP area. He is also coauthor (with Juan Liu) of a paper that received the IEEE Signal Processing Society 2002 Young Author Best Paper award in the IMDSP area. He was selected as Beckman Associate of UIUC's Center for Advanced Study (2003) and Sony Faculty Scholar (2005-2007). He was plenary speaker for several international conferences and workshops, and Distinguished Lecturer of the IEEE Signal Processing Society for 2012-2013. He was on the Dean's list of teachers rated excellent by their students in 1996, 1999, 2000, 2005, 2007, 2009, 2011, 2012, and 2014.

活動時間: 2016年5月19日(星期四)上午10:30-11:30

活動地點: 台灣科技大學 IB-202

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協辦單位: 台灣大學電信所、台灣大學資工系

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