

TITLE: From groups to crowds: a social signal processing perspective

ABSTRACT: After years of research on automated analysis of individuals, the computer vision community has shifted

its attention towards the new issues of modeling groups and crowds. Within the scope of computer vision, groups are generally defined simply as two or more people moving at a similar velocity, spatially and temporally close to one another. However, things are a bit more complex: there are many kinds of groups, that differ in dimension, durability (ephemeral, ad hoc or stable groups), in/formality of organization, degree of "sense of belonging", level of physical dispersion etc.. Along the same lines, crowds are usually intended as a large number of persons gathered closely together; but, even in this case, the notion of crowd is much more complex and requires a more detailed account, which is basically missing in the computer vision community. In this talk, we build on concepts inherited from the sociological analysis and we offer a detailed taxonomy of groups and crowds. As we will see, this analysis individuates many typologies of social gatherings, each with its own characteristics and behavior dynamics. These differences are not only useful for a mere classification purpose, but are crucial when the need of automatic modeling comes into play, eliciting particular computer vision techniques and models as the most appropriate to account for such differences. In this talk, in particular, we will focus on a specific kind of group, i.e. free-standing conversational group, and one kind of crowd, i.e. spectator crowd, showing recent advancements in their automatic modeling.

Short Bio

Cristani Marco (Ph.D.) is associate professor since 2014 at the Università degli Studi di Verona, Department of Computer Science, where he teaches and does research within the Vision, Processing and Sound lab (VIPS). He is also Associate Member of the National Research Council (CNR) and Research Affiliate with the Istituto Italiano di Tecnologia, Genova, Italy, where he was Team Leader since 2009-12. His interests are focused on generative modeling and in particular on generative embeddings, with applications on social signal processing and multimedia. Prof. Cristani is co-author of more than 130 papers on important international journals and conferences. He is in the technical program committee of social signalling, pattern recognition conferences and organizer of social signalling/video surveillance. He also organized several PhD schools on the same topics. He has been invited speaker of international conferences and schools of video surveillance and social signal processing. He has been Doctoral Symposium Co-chair for the ACM Multimedia conference 2013, the 16th ACM International Conference on Multimodal Interaction 2014, and Area Chair for the WACV 2015, ICME2015. He is Associate Editor for PLOS ONE, Neurocomputing and Pattern Recognition Letters, and Review Editor for Frontiers. Finally, prof. Cristani is also member of the IEEE, ACM and of the IAPR.