

DEFESA DE TESE DE DOUTORADO

Programa de Pós-Graduação em Ciência da Computação

EMOTION, PERSONALITY AND CULTURAL ASPECTS IN CROWDS: TOWARDS A GEOMETRICAL MIND

ALUNO: Rodolfo Migon Favaretto ORIENTADORA: Dra. Soraia Raupp Musse BANCA EXAMINADORA: Dr. Bruno Feijo (DI/PUCRJ), Dr. Luiz Chaimowicz (DCC/UFMG), Dr. Avelino Francisco Zorzo (PPGCC/PUCRS) DATA: 29 de março de 2019 LOCAL: Prédio 32, sala 404 HORÁRIO: 10:00

RESUMO:

The study of human behavior is a subject of great scientific interest and probably an inexhaustible source of research. The analysis of pedestrians and groups in crowds is an object of interest in several areas of application, such as security, entertainment, planning of environments in public spaces and social sciences. Cultural and personality aspects are attributes that influence personal behavior and affect the group to which the individual belongs. In this sense, the present thesis discusses different ways to characterize individuals and groups in crowds, with the purpose of proposing a computational model to extract pedestrian characteristics in video sequences. The proposed model considers a series of characteristics of the pedestrians and the crowd, such as number and size of groups, distances, speeds, among others, and performs the mapping of these characteristics in personalities, emotions and cultural aspects, considering the Cultural Dimensions of Hofstede (HCD), the Big-Five Personality Model (OCEAN) and the OCC Emotional Model. The main hypothesis is that there is a relationship between so-called intrinsic human variables (such as emotion) and the way people behave in space and time. As one of the main contributions, four large dimensions of geometric characteristics (Big4GD) were proposed: Physical, Personal and Emotional, Social and Cultural, which seek to describe the behavior of pedestrians and groups in the crowd. The GeoMind tool was developed for the purpose of detecting the four geometric dimensions from video sequences. In addition, several analyzes were carried out with the purpose of validating the proposed model, from comparing results with the literature, including the comparison of spontaneous multitudes from several countries and controlled experiments involving Fundamental Diagrams.

Keywords: Crowds, Cultural Aspects, Personality and Emotion, Computer Vision.