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Keynote lecture title: Multiple drone vision and cinematography

Abstract: The aim of drone cinematography is to develop innovative intelligent single- and multiple-drone platform for media production to cover outdoor events (e.g., sports) that are typically distributed over large expanses, ranging, for example, from a stadium to an entire city. The drone or drone team, to be managed by the production director and his/her production crew, will have: a) increased multiple drone decisional autonomy, hence allowing event coverage in the time span of around one hour in an outdoor environment and b) improved multiple drone robustness and safety mechanisms (e.g., communication robustness/safety, embedded flight regulation compliance, enhanced crowd avoidance and emergency landing mechanisms), enabling it to carry out its mission against errors or crew inaction and to handle emergencies. Such robustness is particularly important, as the drones will operate close to crowds and/or may face environmental hazards (e.g., wind). Therefore, it must be contextually aware and adaptive, towards maximizing shooting creativity and productivity, while minimizing production costs. Drone vision plays an important role towards this end, covering the following topics: a) drone visual mapping and localization, b) drone visual analysis for target/obstacle/crowd/POI detection, c) 2D/3D target tracking, d) privacy protection technologies in drones (face de-identification). This keynote lecture will offer an overview of all the above plus other related topics.