

Research Internship

“Autonomous cinematographic drones”

Team

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Keywords

Animation 3D, Virtual Cinematography, drones

Context

In gaining control, precision, ability to self-stabilize, and capacity to carry professional cameras, drones have become a new device in the filmmaker's tool box. However, besides basic automated features like "follow-me" (using GPS or visual target tracking), drones are lacking basic cinematographic features. Recent approaches [1,2] have demonstrated the feasibility of empowering cinematographic drones with some form of cinematographic knowledge [3], using languages such as PSL (Prose Storyboard Language)[4], and providing filmmakers and also regular users with more expressive means to control drones than using joysticks.

Objectives

The objective of this internship is to work on novel means to control drones using cinematographic features. While properties on framing have been implemented (see [2]), there is no language nor implementation to properly specify and control camera trajectories in cinematographic ways and in relation to the events occurring in the scene. To address this issue, our objective is to build on prior work [5,6] on optimization of camera trajectories to provide both models and design tools that enable the specification and control of drones paths following cinematographic features.

The work will first consist in studying the current approaches proposed in virtual environments, then provide a language to describe camera behaviors, and finally provide an implementation and perform tests with real drones, using the motion capture setup in the Ker Lann campus. The work will be also extend to the problem of coordinating the motions of multiple cinematographic drones

Bibliography

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