THESIS PROPOSALS

REGISTERED OFFICES:
Via Monte Grappa, 15, 36077 Altavilla Vicentina, VI
Via Roma, 98, 36025, Noventa Vicentina, VI

OPERATING OFFICE:
Via Meucci, 30, 36040 Brendola, VI
WHO ARE WE AND WHAT DO WE DO?

Image Studio Consulting is part of the group Antonio Zamperla SPA, international company leader in the field of entertainment and theme parks.

The Image Studio Consulting core business is to create new experiences by means of new technologies (Virtual reality, Augmented reality, sensors...) both integrating them to the attractions already produced by Zamperla and realizing and brand new solutions.

These ideas ask the development of specific algorithms that demand a good level of programming. The main research branches are Computer Vision, Deep Learning, sensors interfacing and this is realized also with external partnerships.

The amusement world is moving faster and faster towards the creation of dynamic experiences through which the guests can interact with the machineries and the objects around him.

An important project we are working on is the production of a gaming shooting system that will be integrated into dark rides e walk through.
Single view multiple small objects tracking and filtering

Master thesis project
The application we are studying often encounter some difficulties: they need a real-time process, a very low error rate, they work in low light conditions and potentially vast environments.

Overview:
• Study of the localization of 4 objects in a scene, in particular study of different solutions to locate the objects (diverse shapes, colours...) and comparison of the performance.
• Proposal, design and development of a tracking and positioning filter for freely moving objects in the scene.
• Analysis of different filters and comparison of performance.
• Try the system on site.
• Main focus: keep the error lower than 3%.

Requirements
Basic knowledge of C/C++ and Computer Vision
Experience (minimal) with Visual studio or Linux is preferred.

Available career after the stage!

Write to research@imagestudioco.com
Multiple view object tracking

Master thesis project
In low light conditions, in dispersive environments, people moving can create occlusions. Developing a system that uses a net of cameras to tracking, allows to track small objects and fix this problem.

Overview:
• Study of the localization of objects in a scene by using a net of cameras;
• Proposal, design and development of a tracking and positioning filter for freely moving objects in the scene.
• Test and validation the proposed algorithm

Requirements
Basic knowledge of C/C++ and Computer Vision
Experience (minimal) with Visual studio or Linux is preferred.

Available career after the thesis!

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Deep learning object recognition and tracking

**Master thesis project**

Last years research have discovered the *deep learning* technology that, by means of neural networks, allows the recognition of high level (complex) objects. The project is focused on to recognize objects in a low light room and to track their movements.

**Overview:**
- Study of the localization problem of objects in a scene
- Study of libraries Keras, TensorFlow e YOLO
- Proposal, designed development of algorithm using the previous libraries and comparison of each performance;
- Test and validation the proposed algorithm

**Requisiti**

Preferable basic knowledge of C/C++, Python and Computer Vision

Available career after the thesis!

Write to research@imagestudioco.com