THESIS PROPOSITION

Please fill out all requested data and send back the form to emaro-adm@irccyn.ec-nantes.fr before 9th May.

Subject: Motion and depth estimation for scene exploration

Supervisor(s): Fabio SOLARI and Manuela CHESSA

Laboratory: Slipguru – DIBRIS (University of Genoa)

Field of research: Artificial vision

Motivations and general objectives:

To explore a real environment, e.g. to navigate and to reach a target, is a crucial ability for artificial agents. The motion and depth information about the scene and their integration into 3D flow can be effectively computed by using bio-inspired models of the human visual system.

The aim of this thesis is to develop an integrated neural model that provides the ability of exploring the environment.

The expected results are software modules (CPU or GPU-based) for motion, depth and 3D flow estimation, and their assessment in real conditions.

Proposed work plan

The student is expected to carry out the following tasks:

1. Analysis of state of the art approaches to motion, depth and 3D flow.
2. Development of a biologically inspired algorithm for 3D flow bases on motion and depth processing.
3. Validation and demonstration of the vision system in artificial and real conditions

According to the specific results of the thesis, the student will be involved in the preparation of related scientific publications.
List of bibliographic references


Contacts

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Signature of the local coordinator

Date