



## Thesis Project Form

**Title (tentative):** Evaluating the association between audio-spatial spectral sensitivity and visual impairment

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### Description

#### Motivation and application domain

Spatial hearing and and visual impairment: investigating head-related transfer function for auditory localization.

#### General objectives and main activities

This thesis project aims to investigate whether visually impaired individuals are more sensitive to an alteration of their head-related transfer function for auditory localization. The student will have the chance to formulate scientifically sound research hypotheses, apply their knowledge about time-frequency analysis techniques to experimental data, and draw meaningful conclusions from complex data.

#### Training Objectives (technical/analytical tools, experimental methodologies)

The student will use MATLAB or an equivalent tool to import, visualize and analyze data. He will learn about human hearing perception and the theories of cross-sensory calibration, and the techniques to compute a head-related transfer function.

**Place(s) where the thesis work will be carried out:** IIT and DIBRIS (via Opera Pia 13)

### Additional information

**Maximum number of students:** 1