



Thesis Project Form

Title (tentative): Assessing and recalibrating visual function

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Description

Motivation and application domain

Developing tools to investigate normal visual function is essential to further our understanding of how we visually perceive and interact with the world. Understanding how the healthy visual system works is also a critical step in understanding visual impairment. The proposed thesis project will focus on developing novel techniques to assess and recalibrate visual function.

General objectives and main activities

The objective of the thesis project is to study basic aspects of visual function that might be exploited to preserve or recover visual function in clinical populations. The student will develop tools to measure visual, oculomotor and motor function. These tools will be employed to study basic aspects of normal visually-guided behavior in healthy subjects. Different kinds of visual impairment may be simulated in healthy subjects to study the mechanisms the visual system employs to compensate for visual impairment. These mechanisms should provide insight as to treatment strategies in clinical populations.

Training Objectives (technical/analytical tools, experimental methodologies)

The student will learn to employ an array of methodologies and instrumentation, including:

- Psychophysics
- Eye tracking
- Hand movement tracking
- Stereoscopic Rendering
- Dynamic binocular photorefraction

Place(s) where the thesis work will be carried out: Translational Vision Lab, College of Science, Northeastern University, Boston U.S.

Additional information

Maximum number of students: 2

Financial support/scholarship: Borse "Fondo Giovani"