

New eye-tracking interfaces for remote device activation

IMT Atlantique + Orthoptica



NICOLAS BAUDIN
INTERNSHIPS IN FRANCE INITIATIVE

Name of the hosting institution in France	IMT Atlantique
Name of the host laboratory / research team	Optics department
Address	IMT Atlantique - Département Optique Technopôle Brest-Iroise - 655 avenue du Technopôle CS 83818 - 29238 Brest Cedex 3 - France
Name of the supervisor	Vincent Nourrit
Function	Associate Professor
Email	Vincent.Nourrit@imt-atlantique.fr

Internship offer

Topic of the internship (title) New eye-tracking interfaces for remote device activation

Proposed dates of the internship **Start:** 2019-10-01 **End** 2020-02-28

Scientific and academic objectives of the internship (detailed description of the internship content, work expected from the intern and expected outcomes):

Knowing where someone is looking at presents an interest for numerous applications: marketing, AR/VR user interface, visual substitution devices for the blind, etc. Current commercial eye-trackers consist of cameras and complex image processing algorithms (to calculate various eye motions parameters) which limits their use when a compact, low-power device is needed.

The project aims at investigating new approaches to assess the direction of gaze so that the eye itself could be used in replacement of standard systems such as cursors, crosshair and touch interactions.

Name of industrial partner	Orthoptica
Role of the industrial partner in the internship project	Orthoptica: a spin-off of IMT Atlantique founded in 2011 and composed of a multidisciplinary team of researchers in ophthalmology, orthoptics, optics, medical image processing and human-machine interaction. Orthoptica designs, manufactures and markets new interactive tools to measure and study binocular vision disorders. The company has an interest in developing a new eye-tracking interfaces for remote visual device activation. The trainee will work at Orthoptica's offices.
Main contact at the French industrial partner	Dusan Lorgovan
Name of the Australian partner institution	QUT, UniSA (Wasaa), Newcastle
Main contact in the Australian partner institution	Leonard Fitzpatrick (QUT)
Function of the main contact in the Australian partner institution	International Partnerships and Mobility Manager (QUT)
Email address of the main contact in the Australian partner institution	leonard.fitzpatrick@qut.edu.au
Outside of this ongoing collaboration, will applications coming from students of other eligible Australian universities be considered by the hosting institution in France?	Yes

Expected profile of applicant

Level of study	BSc/MSc
Discipline	Medical engineering, Optics
Required qualities, knowledge and skills	The ideal candidate would combine a sound knowledge and good experimental skills in electronics and optomechanics. Basic programming skills (e.g. Matlab, C#) are expected and familiarities with visual perception and/or visual optics would be an asset, as would experience with statistical methods. The candidate should be able to demonstrate independence and curiosity and be able to lead the project forward.