UNIVERSITY OF GENOA
DEPARTMENT OF INFORMATICS, BIOENGINEERING, ROBOTICS AND SYSTEMS ENGINEERING
MASTER'S PROGRAM IN BIOENGINEERING

Dibris

Thesis Project Form

Title (tentative): Characterization of Drusen in patients with dry age-related macular degeneration (AMD) by Color Fundus Photography (CFP) and Spectral Domain Optic Coherence Tomography (SD-OCT)

Thesis advisor(s): Sabatini Silvio P., Nuno Miguel de Pinto Lobo e Matela (Universidade de Lisboa)

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Description

Motivation and application domain

his MSc project is integrated in a prospective clinical study that will take place at Hospital dos Capuchos, Centro Hospitalar Lisboa Central.

General objectives and main activities

This thesis will be integrated in a prospective clinical study that will take place at Hospital dos Capuchos, Centro Hospitalar Lisboa Central. The aim of this study is to establish correlations between drusen type and morphology, evaluated by Color Fundus Photography (CFP) and Spectral Domain Optic Coherence Tomography (SD-OCT), with the corresponding Fundus Autofluorescence (FAF) and Optic Coherence Tomography Angiography (OCT-A) features of the same drusen in patients with dry age-related macular degeneration (AMD).
The student will start by doing a review of the state-of-the-art in image analysis in AMD.
The student will have regular meetings with the clinical partners to discuss the relevance of the imaging biomarkers.
The student will use a previously implemented graphics user interface to analyse the images and develop new image processing and analysis methods to retrieve relevant data from the images acquired with the techniques used in the study (described above).
By the end of this project we will be able to deploy a software that can allow a quantitative evaluation of disease progression in patients with AMD.

Training Objectives (technical/analytical tools, experimental methodologies)

The student will develop skills related with image processing, image analysis, programming in Matlab, physiology of age-related macular degeneration and biostatistics.

Place(s) where the thesis work will be carried out: Instituto de BiofÃ-sica e Engenharia BiomÃ©dica, Faculdade de CiÃªncias da Universidade de Lisboa

Additional information

Maximum number of students: 1

Financial support/scholarship: ERASMUS+