Software Presentations

Tuesday 11 July, Pentland East & Pentland West

16.45 – 17.30

Software presentation no. 1

Name of the Software: ALTEA (ALzheimer TExture Analyzer)

Presenter: Rafael Ortiz-Ramón (on behalf of Carlos López-Gómez, Rafael Ortiz-Ramón and David Moratal) Centre for Biomaterials and Tissue Engineering, Universitat Politècnica de València, Valencia, Spain

Purpose and features: ALTEA software allows the user to perform texture analysis on MR images of patients diagnosed with Alzheimer's disease using an intuitive and easy-to-use interface. The main purpose of this software is to find possible diagnostic markers of the disease by means of texture analysis. The software was originally developed to extract 2D texture features from regions of interest (ROIs) containing the hippocampus of Alzheimer's disease (AD) patients, early Mild Cognitive Impairment (EMCI) patients and normal-aging subjects. Texture features derived from the co-occurrence matrix and the run-length matrix can be extracted from circular ROIs with different radii chosen by the user and then these features can be analysed statistically to study the differences between groups of patients. A machine learning section to build predictive models is currently being developed. Also, a 3D texture analysis approach is being considered at present.

Operating System/Platform: The software has been developed in MATLAB R2015a using a Windows 10 OS.

Other technical details (e.g. libraries used, etc.): The MR images employed for developing the software were obtained from the Alzheimer's Disease Neuroimaging Initiative (ADNI) (http://adni.loni.usc.edu/). The texture features are computed using the toolbox RADIOMICS, implemented by Martin Vallières (https://github.com/mvallieres/radiomics)

Software presentation no. 2

Name of the Software: Blackford Smart Localizer

Presenter: Rob Tweedie - Technology Lead Blackford Analysis

Purpose and features: A localizer tool that allows users to instantly navigate to the same anatomical location across current and all relevant prior studies, or series in the same study, that are in different Frames of Reference.

Operating System/Platform: Windows

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Software presentation no. 3

Name of the software: OpenRib

Presenter: Catalina Tobon-Gomez. Toshiba Medical Visualization Systems, Edinburgh, UK

Purpose: Unfolder view of the rib cage (see Poster 64 for additional details)

Operating System/Platform: Windows/Vitrea

Software presentation no. 4

Name of the software: Global Illumination

Presenter: Dave Elcock. Toshiba Medical Visualization Systems, Edinburgh, UK

Purpose: Realistic volume rendering (see Poster 58 for additional details)

Operating System/Platform: Windows/Vitrea

Software presentation no. 5

Name of the software: VAMPIRE (Vessel Assessment and Measurement Platform for Images of the Retina)

Presenter: Ahmed Fetit. University of Dundee, Dundee, UK

Purpose: Efficient measuring of the morphometry of the retinal vasculature from fundus camera images. 130 measurements based on calibre (including the classic AVR, CRAE, CRVE), tortuosity and fractal dimension are generated per image in different retinal zones and quadrants.

Operating System/Platform: Windows/MATLAB 13.0 onwards