



FACULTY MENTOR

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PROJECT TITLE

Development of Algorithms for Rendering, Region-Segmenting and Path-Following in BrainWatch VR Software

PROJECT DESCRIPTION

Several visualization scenarios for viewing brain scans in 3D virtual reality environments with BrainWatch VR Software were described in Taswell et al 2017 EMBC. This project aims to improve software for interactively exploring brain scans with available consumer hardware including the Oculus Rift, PlayStation VR, and MetaVision Meta 2. For rendering algorithms, we will prioritize computational efficiency for responsive visualization of the virtual environment in real time without jitter or other artifacts. For region-segmenting and path-following algorithms, we will prioritize computational accuracy with respect to correct identification of anatomical structures and neural pathways in the brain. Algorithm design will be guided by its application to the study of neurodegenerative disorders and dementias. See <http://www.brainhealthalliance.org/STEMM/Papers> for further information on research projects at Brain Health Alliance.

INTERNS NEEDED

3 students total (1 or 2 BS + 1 or 2 MS)

PREREQUISITES

Knowledge of image processing is helpful but not required