FACULTY MENTOR
Ettenhofer, Mark

PROJECT TITLE
Eye tracking in VR for diagnosis of neurological conditions

PROJECT DESCRIPTION
Perform software development and hardware integration for virtual reality (VR) and eye tracking sensor technology and cognitive tests used to diagnose neurological conditions in humans.
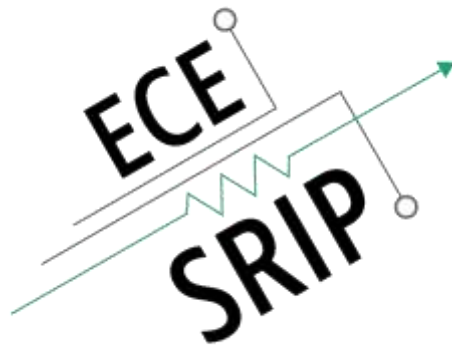
This project can accommodate both remote and in-person students

INTERNS NEEDED
2

PREREQUISITES
Will be using Python, Unity, and/or C#

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PROJECT TITLE
Computer vision for analysis of eye movements and pupil response in individuals with brain injuries

PROJECT DESCRIPTION
Develop and test computer vision models to estimate eye movements/position and pupil diameter from high-speed video of human eyes. Integrate with gyroscope measures of head movement.
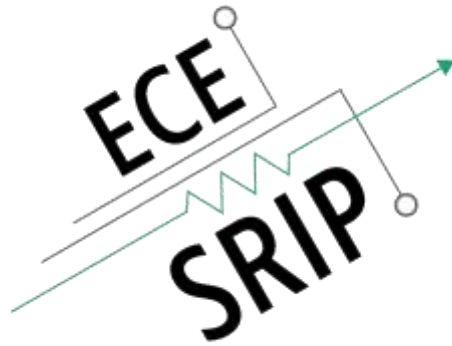
This project can accommodate both remote and in-person students

INTERNS NEEDED
1

PREREQUISITES
Experience with digital image processing, computer vision, Python, MATLAB

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PROJECT TITLE
Multi-modal physiological signal processing for assessment of human performance after brain injury

PROJECT DESCRIPTION
Primary/required: Develop and test a signal processing pipeline to extract relevant physiological metrics from EMG, ECG, GSR, temperature, and respiration collected from human subjects during performance of complex cognitive/motor tasks. Secondary/optional: Build and test machine learning models to predict human performance from physiological signals.

This project can accommodate both remote and in-person students

INTERNS NEEDED
1

PREREQUISITES
Experience with signal processing, MATLAB. Optional: experience with machine learning.