ENGINEERING PSYCHIATRY
research program

FACULTY MENTOR
Mark L. Ettenhofer

PROJECT TITLE
Eye tracking in VR for diagnosis of neurological conditions

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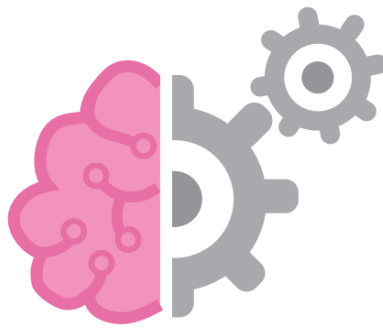
This project can accommodate both remote and in-person students

INTERNS NEEDED
1 Student

PREREQUISITES
- Prior experience with Python, Unity, and/or MATLAB

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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.
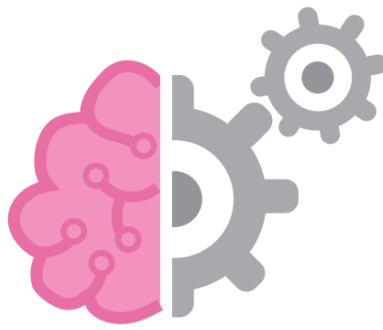
This project can accommodate both remote and in-person students

INTERNS NEEDED
1 Student

PREREQUISITES
- Experience with computer vision, Python, and/or MATLAB

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PROJECT TITLE

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

PROJECT DESCRIPTION

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. 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 Student

PREREQUISITES

- Experience with signal processing, MATLAB, and machine learning