FACULTY MENTOR
Cosman, Pamela

PROJECT TITLE
Eye-tracking for quantifying reading behavior

PROJECT DESCRIPTION
This project uses eye-tracking glasses, computer vision, and signal processing techniques to study where children look when they read. By segmenting a page into areas of figures, captions, and text boxes, and tracking a person's gaze, we hope to learn various things, such as when children are skimming or reading in depth, when they get stuck on a word, and when a page layout is confusing. This work can be part of a reading assessment and training system.

This project can accommodate both remote and in-person students

INTERNS NEEDED
2

PREREQUISITES
Knowledge of machine learning and/or image & signal processing
**FACULTY MENTOR**
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**PROJECT TITLE**
Using mobile devices and computer vision to aid physical therapy

**PROJECT DESCRIPTION**
Recently there has been progress in estimating human body pose from a single RGB camera. This project aims to use cell phone cameras to estimate hand or body pose to aid in physical therapy. For example, determining hand pose can allow a system to tell whether hand exercises (often involving squeezing a sponge of particular resistance), are being done correctly.

This project can accommodate both remote and in-person students

**INTERNS NEEDED**
2

**PREREQUISITES**
Machine learning
**FACULTY MENTOR**
Cosman, Pamela

**PROJECT TITLE**
Point cloud compression

**PROJECT DESCRIPTION**
Point clouds are one of the main representations of 3D video content, and point cloud compression is an active research area. This project aims to improve point cloud compression through the use of long-term reference frames, in which content is available from the past to enable more accurate motion compensated prediction.

This project can accommodate both remote and in-person students

**INTERNS NEEDED**
2

**PREREQUISITES**
Good programming skills, some knowledge of image/video compression or background in image/video processing