Flow and Resistance Visualization
Swim Tech LLC

About US

Swim Tech LLC is a water sports company that is working to provide education, and accessibility by creating a community around water sports and exercise. Our company is designed to provide swim education classes and programs to all ages and skill levels. Our classes range from beginner to advanced, and our programs range from Intro to Water Polo to Competitive Swim Teams. Our goal is to fill the growing need and interest in water safety and water sports.

The Project

Swim Tech is looking to develop new software to help swimmers visualize problem areas in their strokes. This work will be directed toward building a model to compute resistance/drag areas based on a video of a swimmer, and create an AR-like display (video overlay) to display the information in a helpful manner. A successful project includes the following:

- Model resistance based on a video input
- Create a GUI for easy user interaction
- The GIU must display an AR- like video overlay of the resistance spots.
- (Stretch Goal) Based on video input identify typical incorrect body positions (we will specify these for you, don't worry) and add overlays into the video to point those out

Skill Sets

This project will be a great learning experience. Some knowledge in computer vision, augmented reality, machine learning, and video editing would be helpful for this project. Otherwise skills you may learn or improve upon in this project include.

- Computer Vision
- Manipulating Video files
- Machine learning
- GUI design
- Simulation and modeling

Team Size and Location

We will need a team of 3-5. You decide on location! No travel necessary. We will connect over Zoom for weekly meetings. For this project, you will be asked to sign IP rights and title over to Swim Tech LLC.