



# 3D CAPTURING OF A SWIMMER

## Assignment

This assignment is inspired by a case at Innosportlab Eindhoven where Sioux LIME cooperates with. Innosportlab works with world-class swimmers and aims at making them faster leveraging technology.

The specific question we are considering here is the following: can we make a 3D-analysis of a (world-class) swimmer based on camera video data taken from 6 underwater cameras? Can we do this marker-free, so without putting markers on the swimmer?

Solving this full case in a single internship seems too much of a challenge. However, we can break this down and look at specific parts of the solution and explore promising directions to pursue. One of these directions is to use a simulation/virtual environment for this and subsequently use a machine learning based approach for the task at hand.

## Internship overview

- Master Student
- Graduation Assignment
- Mathware
- Location: Eindhoven

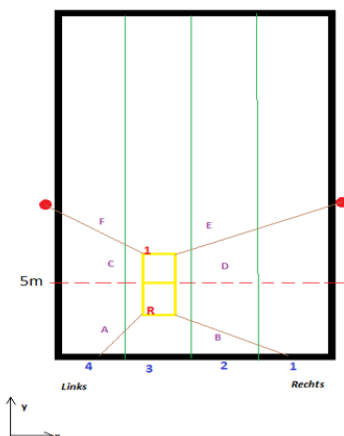
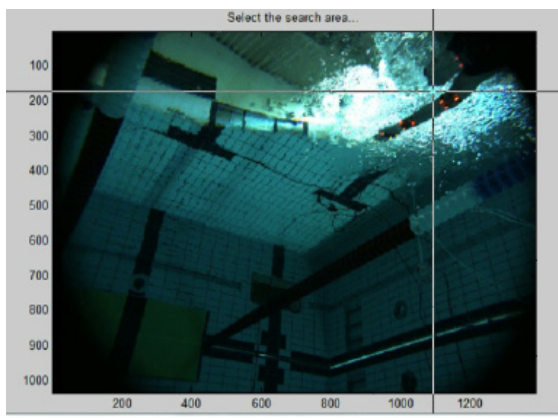
## Technologies

- 3D
- Pose Estimation
- Deep Learning
- Simulation



How to setup such a virtual environment? How to apply it for learning? How should the machine learning model look like? What would a simpler task to start with and can we demonstrate that it works? What is the state-of-the-art in pose estimation and how can we successfully apply it to a case like this?

In this assignment we can look at any of these questions. We can formulate a specific assignment that both fit our and your interest at the moment of application.



### Why choose Sioux?

- Working on innovative technology
- Challenging, dynamic and varied work
- A comfortable and personal work environment
- Plenty of opportunities for personal development
- Great career opportunities
- Contributing to a safe, healthy and sustainable society

### Get in touch!

Would you like to know more about this student assignment?

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