# An experimental platform for studying multimodal user behavior in extended reality

## Keywords

virtual reality, motion capture, human attention and motion, data processing and analysis

## Location

- Centre Inria d'Université Côte d'Azur

## Supervisors

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## Duration

4 to 6 months

## Description

This internship lies in the framework of ANR CREATTIVE3D, which is a national-funded project that will study the impact of low-vision conditions when navigating complex environments by deploying virtual reality headsets (VR) and user attention and behavior modeling, and the use of this understanding for the design of tools and protocols for rehabilitation of patients.

The intern student will work with other students and researchers to help establish the experimental platform which will have the general goal of using extended reality environments for research on navigation behaviors using VR headsets, motion capture systems, and measures of cognitive load. This will involve specifically:

1/ the testing and configuration of headsets and external sensor equipment (motion capture suits and physiological sensors) for collection and streaming of real-time information using Unity 3D,

2/ researching and implementing solutions for the processing (notably synchronization) of various sensor data for human locomotion tasks,

3/ pilot testing the platform with potential users and 3D scenarios from the CREATTIVE3D project to establish an intial dataset of multimodal behavioral data.

## Pre-requisites

Mandatory:

- coursework on 3D graphics and animations and/or virtual reality
- excellent programming skills in C# for Unity 3D
- good Python programming proficiency for data processing

Appreciated:

- experience with virtual reality headsets and/or sensor equipment (mocap, physiological sensors, eye tracking)