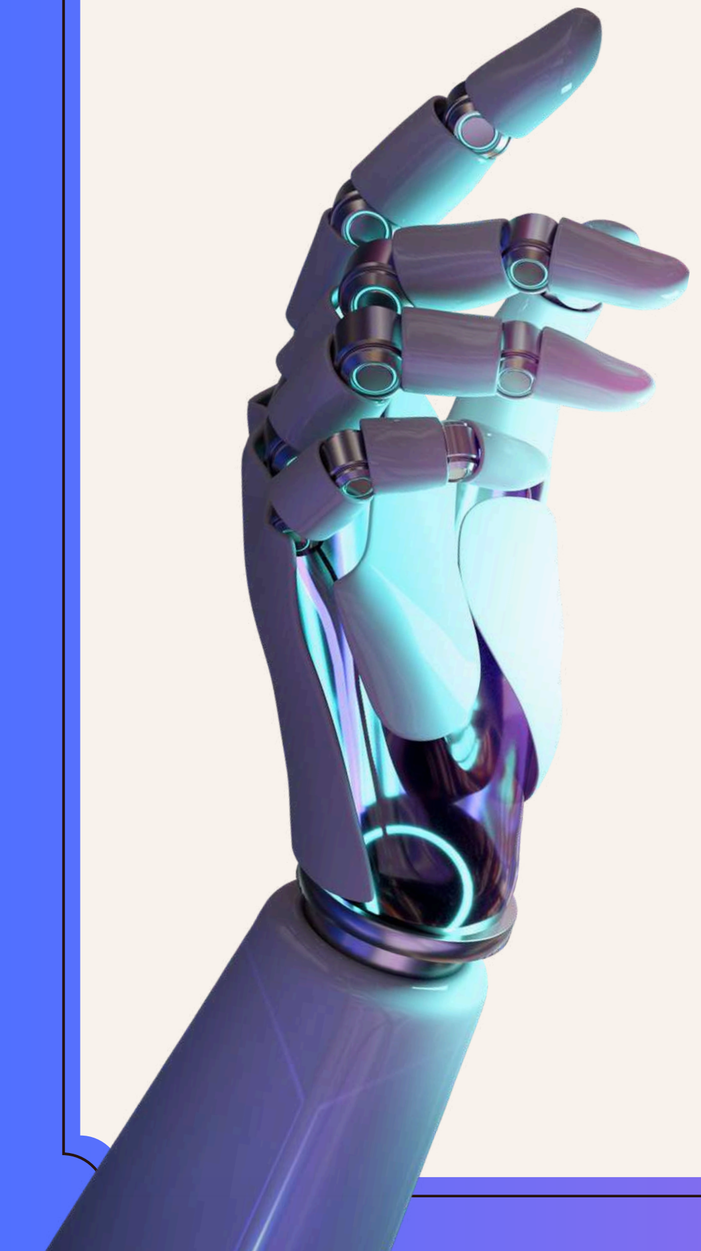


Software Quality and Human Computer Interaction Lab

LAB EQUIPMENT

SQHCILab, CEID, UPatras

EYE TRACKING GLASSES

In our research, we employ cutting-edge eye tracking systems such as the Tobii Spectrum 300Hz and Tobii Mobile Glasses 3 to collect detailed eye movement data. This data is crucial for developing advanced software applications. These technologies enable us to conduct in-depth observational studies, examining how users interact with eye tracking systems.

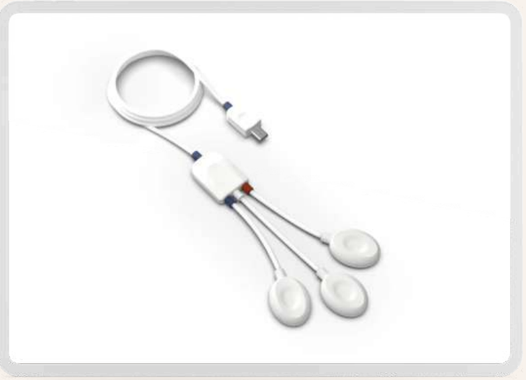
VIRTUAL REALITY (VR) GLASSES

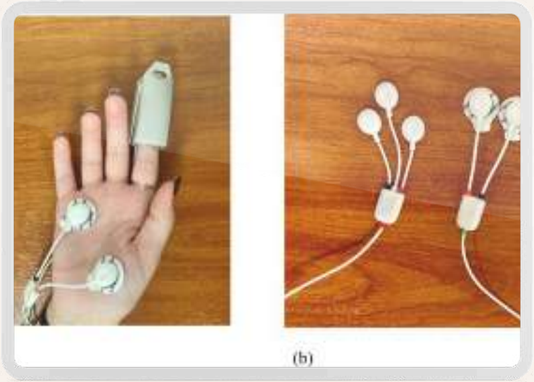
We utilize state-of-the-art VR glasses to immerse users in virtual environments. These VR systems allow us to study user interactions in controlled, simulated settings. Our VR equipment supports high-fidelity simulations and is used for a range of applications, from educational tools to complex scenario-based training programs. This technology is pivotal in exploring how users navigate and interact within virtual worlds.

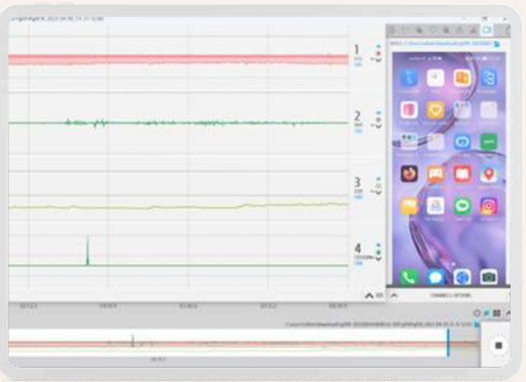
PHYSIOLOGICAL SENSORS

Our lab is equipped with advanced physiological sensors designed to measure and analyze a variety of biometric data. These sensors are used to monitor heart rate (ECG & BVP), skin conductance (EDA), muscle activity (EMG), brain activity (EEG) and other physiological parameters.

The data are collected and analysed with the help of the OpenSignals application provided from PLUX Biosignals. By capturing and analyzing this data, we gain insights into the user's emotional and physical states, which are crucial for designing user-centric applications and improving user experience (UX).





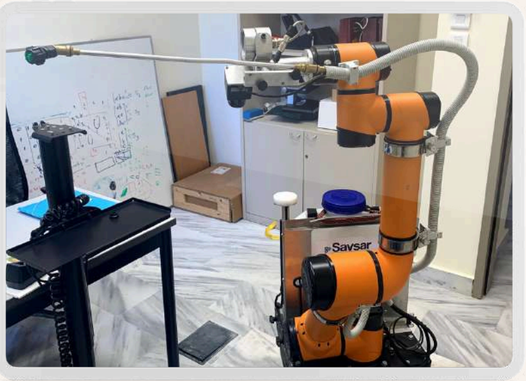


DRONES

Our work extends to programming drones and creating custom graphical user interfaces (GUIs) with the use of the DJI Tello EDU drones. These GUIs are specifically designed to meet the needs of various target groups, such as farmers, ensuring the interfaces are both user-friendly and efficient. This multidisciplinary approach enhances our ability to improve and innovate in human-technology interaction.

ROBOTS

We are equiped with the Agrirobot and SAVSAR prototype robots, used to focus on Human-Robot Interaction, and in particular designing the user interface and the interaction for agricultural robots.

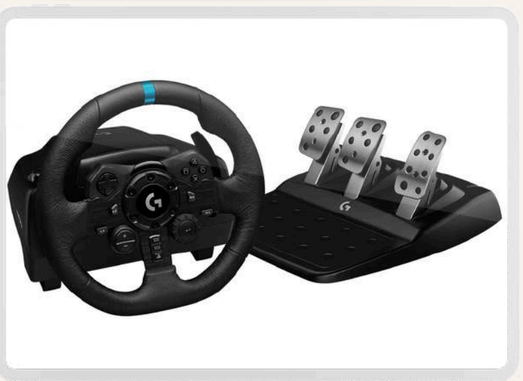


MICROSOFT FLIGHT SIMULATOR

Microsoft Flight Simulator is a highly realistic flight simulation software that allows users to experience piloting various aircraft in a meticulously detailed virtual environment. In our research, it can be utilized to analyze user interface design, control mechanisms, and the cognitive processes involved in navigating complex virtual systems. Additionally, the simulator can be used to develop and test new interaction techniques, such as virtual reality interfaces, voice commands, and adaptive control systems, making it a valuable resource for advancing our understanding of effective human-computer interactions.

CAR & FLIGHT SIMULATOR

The Professional Motion Simulator Platform 3-AXIS-HERO is an advanced simulation system designed to replicate realistic motion dynamics across three axes. It is integrated with dedicated flight and car control systems, allowing users to experience immersive aviation and driving scenarios. By combining precise motion feedback with intuitive control interfaces, it supports research, training, and development activities focused on human-machine interaction and performance evaluation.



MINECRAFT EDUCATION

Minecraft Education is a platform that hosts educational Minecraft games. It combines the engine and the mechanics of the widely popular 3D simulation sandbox computer game: Minecraft, together with resources that are designed to aid students and teachers learn about STEM and coding. It is used primarily to implement game based learning strategies aimed at students and youth.