CS PhD Seminar Series

Sep 9th | 14:30-15:30 | Room 217

Be BRAVE! The Journey to Build a VR App for Social Anxiety Treatment

How can Virtual Reality support individuals struggling with social anxiety? This seminar presents the ongoing development of BRAVE, a VR-based application designed to assist in the treatment of social anxiety disorder through personalized exposure therapy and biofeedback. The BRAVE project aims to create immersive scenarios that simulate real-life social situations, allowing users to confront and manage their anxiety in a controlled environment. These Virtual Environments are designed to be adaptable, providing varying levels of social interaction complexity to match individual user needs. From early concepts and prototypes to current challenges and future objectives, the session offers a behind-the-scenes look at a multidisciplinary journey that integrates psychology, computer science, and biomedical engineering.

Speaker: Matteo Martini

Matteo Martini is a second-year PhD student in Computer Science at the University of Genova. His research mainly focuses on the development of innovative rehabilitative solutions exploiting Virtual Reality, with applications tailored for individuals with severe cognitive and motor disabilities, as well as anxiety disorders. His interests include eXtended Reality, Human-Computer Interaction, Visual Perception, and Serious Games. He holds both a Bachelor's and a Master's degree in Computer Science from the University of Genova. His Master's thesis focused on dynamic obstacle avoidance in Virtual Reality. He is currently working at the Perception and Interaction Laboratory (PILab) at the University of Genova, under the supervision of Prof. Manuela Chessa and Prof. Danilo Pani (University of Cagliari).

Revolution in Photovoltaic Inspection: Comparing Traditional and Drone-Based Methods

Photovoltaic (PV) systems are essential for renewable energy, harnessing sunlight to generate electricity in large-scale solar farms. Maintaining their performance requires regular inspections to identify defects like cracks, hot spots, and environmental buildup, which can reduce efficiency and lifespan. This seminar begins with an overview of PV fundamentals and the need for defect detection, then focuses on comparing traditional and modern inspection approaches. The conventional method uses manned planes for aerial imaging, incurring high costs, rigid scheduling, low-resolution images, and results delayed by weeks. In contrast, the emerging drone-based method employs high-resolution thermal and RGB cameras, automated flight paths, and AI analysis for cost-effective, flexible inspections with superior detail and outcomes ready in days. Drawing from developments in drone control software using DJI SDK and mobile technologies, we will highlight key advantages in accuracy, speed, sustainability, and scalability, demonstrating how drones are transforming PV maintenance for a more efficient renewable energy future.

Speaker: Peiman Ataei

Peiman Ataei is a PhD candidate in Computer Science at the Università degli Studi di Genova, where he obtained his MSc in Computer Science (2023). Peiman specializes in developing Android applications for DJI drone controllers, focusing on automated flight, waypoint navigation, and real-time data capture for photovoltaic inspections. His research focuses on drone-based photovoltaic inspections, integrating AI and mobile technologies to enhance renewable energy maintenance. Affiliated with JP DRONI SRL, he develops automated drone control systems under the supervision of Mr Jacopo Calla, Professor Chessa and Professor Delzanno. Peiman's work advances efficient, scalable solutions for solar infrastructure.