

In everyday life, we are rarely alone in how we perceive and interact with the world. From the silent communication of a glance to the shared focus on a common goal, our visual perception is embedded in the social cues around us. This phenomenon is at the core of the proposed research, which delves into how our social environments shape the way we look at and process visual information. The scientific inquiry into this subject goes beyond simple observation of an individual person's behavior, delving into the complex interplay of social interaction and visual attention. Established upon the theories in psychology, such as the drive theory and distraction-conflict theory, the project is established upon a foundation for understanding how the presence of others can affect our cognitive performance. These influences, known as social presence effects, are variable, often enhancing our abilities in familiar tasks and hindering performance in more complex ones. Our investigation aims to investigate this intricate relationship further by focusing on the interaction between task complexity and visual attention, employing cutting-edge dual eye-tracking technology to observe how social presence might improve performance in straightforward tasks within the central visual field while potentially complicating tasks that require peripheral attention. The scientific methodology of the proposed project mainly consists of empirical work that will be established upon several methodological components and techniques. For this, the research team will develop novel research methods that will involve novel empirical paradigms, measures and statistical methods to be a pioneering one in the research domain. What emerges from this research has profound implications for the design of collaborative work and learning environments. By understanding the nuances of how social presence impacts group and individual performance, educators and organizational leaders can create spaces that foster better engagement and efficiency. In learning settings, this means developing strategies that optimize attention and facilitate the acquisition of new skills. Moreover, our findings could have a significant impact on the development of assistive technologies, particularly for those who navigate social settings with heightened challenges, such as individuals on the autism spectrum. By capturing the subtleties of social cues, we can design interfaces and devices that translate these complex interactions into understandable patterns, enabling smoother communication and integration into social spaces. Furthermore, our study's outcomes can influence how we design everyday interactions, from the ergonomics of a vehicle's cabin that keeps a driver's attention road-focused to the development of smart spaces that understand and adapt to human behavior. Even in the realm of marketing and user interface design, these insights could lead to more intuitive systems that recognize and respond to users' gaze and attention, enhancing user experience and engagement. As we get involved in this research, we are not only pushing forward scientific understanding but also paving the way for applications that touch various aspects of our social lives. From creating more inclusive technologies to enhancing the way we learn, work, and connect, the insights from this study promise to offer a richer and better understanding of how we share our visual world.