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Connected Reality: Virtual Immersion in Social Networks

Keywords: *social networks, science of science, augmented reality, data visualization*

Extended Abstract

Have you ever walked into a party and wondered who was the most popular person in the room? Or whom of your colleagues knows the conference speaker and could make an introduction?

We are all embedded in complex webs of social relationships with our friends, families, colleagues, peers, neighbors, etc.. Intuitively, we understand and navigate these social networks, but it is not always clear beyond our immediate ego networks who else is connected to whom[1]. Social networking applications have begun to provide this information in an abstract form, but mapping the networks into the physical world still remains a challenge for their use in everyday social situations[2].

This project builds on recent fundamental advances in *augmented reality* and the *science of science* to provide a virtual immersive experience within a social network. Augmented reality facilitates the exploration of large datasets while leveraging the natural 3D vision perception capabilities of the human brain [3]. Specifically, the ***Connected Reality*** application for android and iOS uses OpenCV facial recognition models combined with ARCore/ARkit to display a social network embedded within the user's 3D space. For IC2S2 2023, we propose to align i) the presenter and attendance lists with ii) Google image search and iii) the OpenAlex bibliometric database. The resulting dataset will enable conference attendees to explore the Computational Social Science Co-authorship network in the conference space. Attendees can also add themselves to the database.

The ***Connected Reality*** application constitutes the first step in a larger project exploring how we search and navigate social networks, and the potential for link prediction algorithms to facilitate social connection. Therefore, the demo of this application at the conference will provide valuable feedback before its deployment in experimental settings at future conferences.

References

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Figure 1: **Connected Reality during a meeting.** Illustration of a scientific co-authorship network rendered through augmented reality during a meeting.