

## [INTRO]

Script: Thank you for participating in our user study. The purpose of this study is to see how users will find “unique” characteristics in one network relative to another network and how users will explain the found unique characteristics. I will explain later what is “unique” characteristics during a tutorial. The user study is expected to take 60-90 min because our tutorial covers an extensive amount of network science concepts.

You will be shown a visual analytics system. You will be given three sets of two networks and perform a task for each of the three. We will provide questions for you to answer during the task and a post-task questionnaire. After finishing all tasks, there will be an in-depth interview.

I want to also note that this study is voluntary and you may choose to leave at any time. In addition, we will be collecting data from this study: the questionnaire, screen recording, audio recording, and video recording of the session.

## [TUTORIAL]

*\*(After the first page of questionnaire)*

### [Slides about Terms]

- Uniqueness
- Centralities

### [Demo]

**Use three examples (price vs random, random vs random, lc vs collins)**

- Network layout view
  - Showing network structure of networks
    - Node color: the value of a selected feature in the feature contribution view
  - Interactions
- Contrastive representation view
  - Showing how unique the target network is when compared with the background
    - Point: each network node
    - Node type: target or background network
    - Node color: the value of a selected feature in the feature contribution view
    - Node proximity: similarity between nodes
    - If the target network has uniqueness, the target network's nodes are more widely spread than the background network's ones
  - cPC1 and cPC2
  - Interactions
- Feature contribution view
  - Feature contributions
    - How strongly each feature contributes to cPC1 or cPC2
  - Features
    - Explanation of representation
  - Interactions
- Probability distribution view
  - Showing probability distributions of the selected feature values of two networks
  - Interactions

### [Training]

- Free time to use the system
- Sample questions (SchoolDay2 vs Day1)
- There is no time limit
- Remember to talk out loud and tell us your thinking process

### [Tasks]

- Remember to talk out loud and tell us your thinking process