Visual Analysis for Human Relationships in Joseon Dynasty

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Introduction

- History is a filed which empirically examines historical records in order to understand facts and relationships between cause and effect.

- Visual analysis can enable users to better understand data by automatically analyzing and visualizing the data.
Introduction

- First, it shortens time to learn historical records by its automated method.

- Second, Visualized system can help users to understand the results more effectively.
Purpose and Background

- Human relationships in modern society share certain characteristics with in pre-modern period.

- We aim to discover the factors affecting human relationships in Joseon dynasty by analyzing historical records in pre-modern period.
Related Work

Annals of the Joseon Dynasty

- The Annals of the Joseon Dynasty are the annual records of the Joseon Dynasty of Korea.
Preprocessing

- In human relationship data, People who agree with a issue are represented in 1, have no idea in 0, disagree in -1.

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User Tasks and Design Objectives

- **Task 1:** Calculating the similarity between each figure and Geojeong Seo in each agenda.

- **Design Objective:** We should create an axis that indicates similarity levels as to mark the relationships on it.

\[
\Phi_{\text{coefficient}} = \Phi = \frac{n_{11}n_{00} - n_{10}n_{01}}{\sqrt{n_1n_0n_0n_1}}
\]
User Tasks and Design Objectives

- **Task 2:** Classifying agenda to present human relationships in specific categories.

- **Design Objective:** Users should be able to select each classification and human relationships will be changed according to each category.
User Tasks and Design Objectives

- **Task 3**: Presenting figures based on the blood relationship and degree of kinship.

- **Design Objective**: We need to visually distinguish relationships between people who have blood relationship or not.
Function of Visualization

- **Task 1**: Calculating the similarity between each figure and Geojeong Seo in each agenda.
Function of Visualization

- **Task 2:** Classifying agenda to present human relationships in specific categories.
Function of Visualization

- **Task 3:** Presenting figures based on the blood relationship and degree of kinship.
Function of Visualization

- Other function of visualization.
Scenario for the Visual Analysis

- **Scenario 1**: Is there a difference in voting patterns if the nature of agenda changes?
Scenario for the Visual Analysis

- **Scenario 2**: Will an individual show different voting patterns if the nature of agenda changes?
Scenario for the Visual Analysis

- **Scenario 3**: Will kinship affect the similarity level in voting patterns?
Research Conclusion

- First, historical events can be classified into five categories, and the opinions on each agenda will vary according to the nature of agendas.

- Second, each figure indicate different opinions in different sets of agendas.

- Third, blood relationship cannot be affected the similarity level of voting patterns.
Demonstration