

The background of the slide is a repeating pattern of various social network graphs. These graphs are circular or semi-circular, with nodes (names) arranged around the perimeter and connected by lines (edges) that form a complex web of relationships. The nodes and edges are rendered in a light gray color, creating a subtle, textured background.

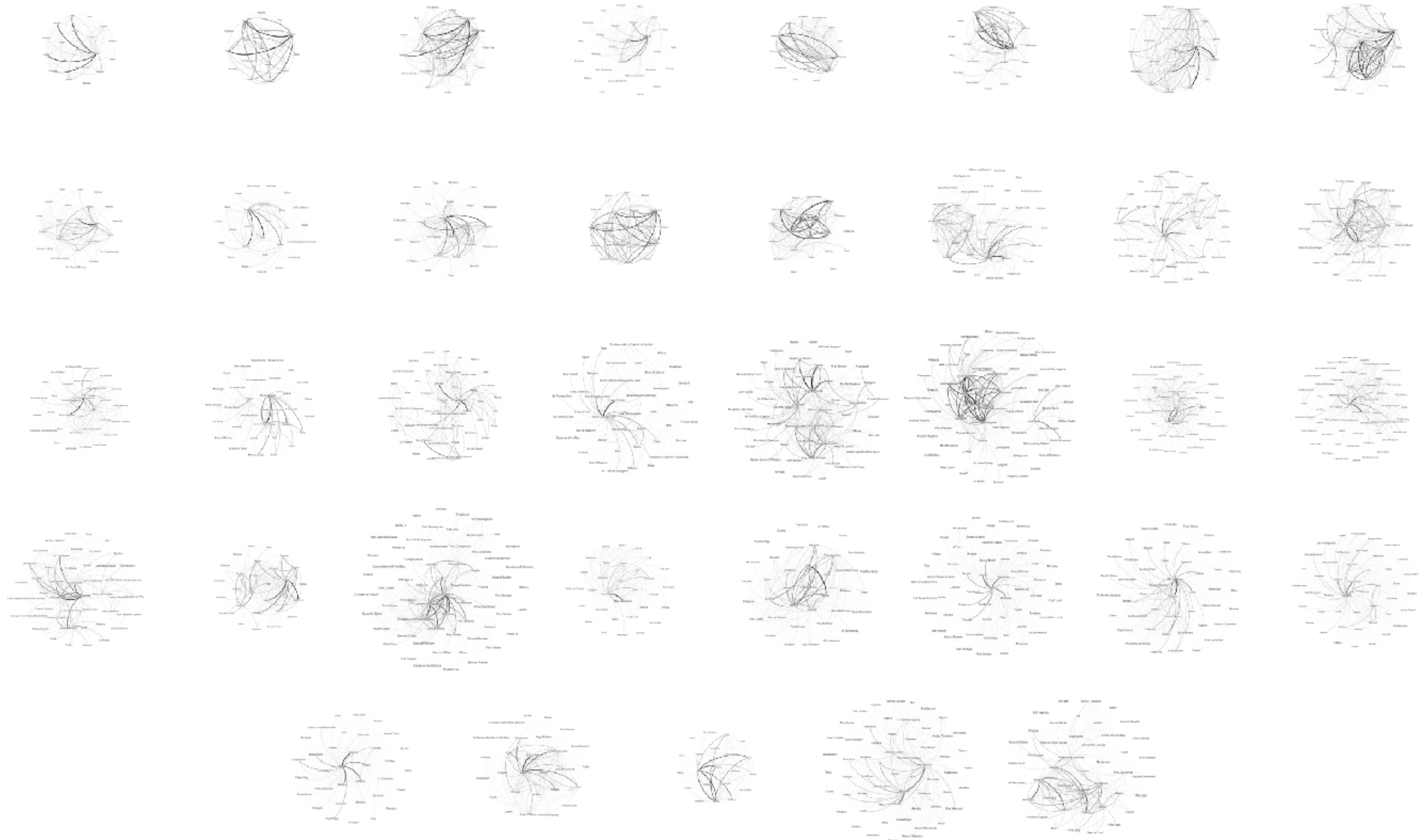
GENERATING SOCIAL NETWORK GRAPHS FROM TEI PLAYS

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37 SHAKESPEARE PLAYS, AS NETWORKS

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derer

Master

Second Gentleman

A Sea-captain

Commons

Walter Whitmore

Master's-Ma

Second Petitioner

Edward

Earl of Warwick

Richard

Suffolk

Earl of Salisbury

Duke of Somerset

Lord Clifford

King Henry the Sixth

Duke of Buckingham

Alexar

Young Clifford

phrey

Richard Plantageret

First Petitioner

Messeng

Thomas Horner

Eleanor

John Hume

Bolin

A Post

Sir John Stanley

A Spirit

Sheriff

A Herald

Servant

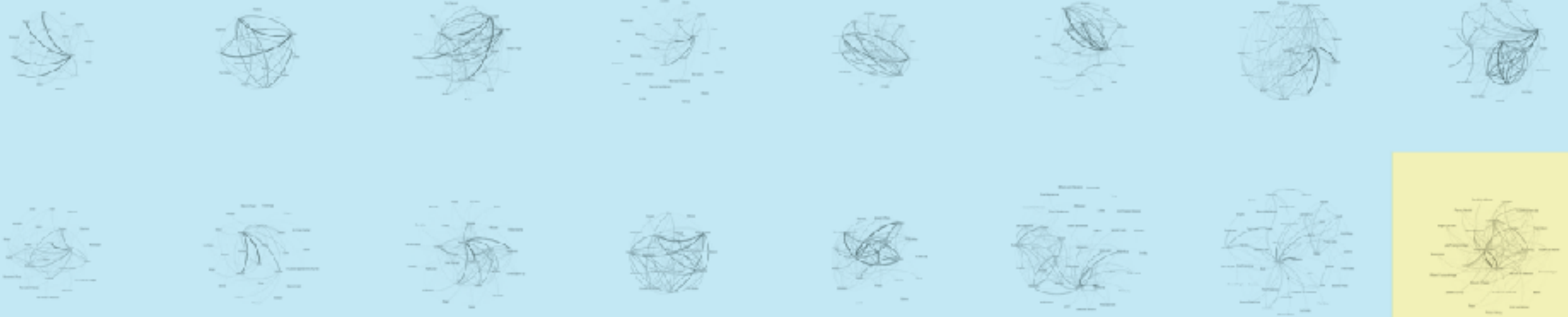
Margare

- Parses presence of character speech (supplemented with stage directions) to track characters present on stage at the same time
- Creates a network with characters as nodes and speech as directional edges
- Edges are weighted by the total words spoken by the “source” character while the “target” character was on stage to (probably) hear
- Graph images show some inaccuracies from simplifying assumptions, but are sufficiently accurate to support machine learning classification
- Could be applied to any TEI plays (including plays in non-English languages)

DO SOCIAL NETWORKS SHOW GENRE?

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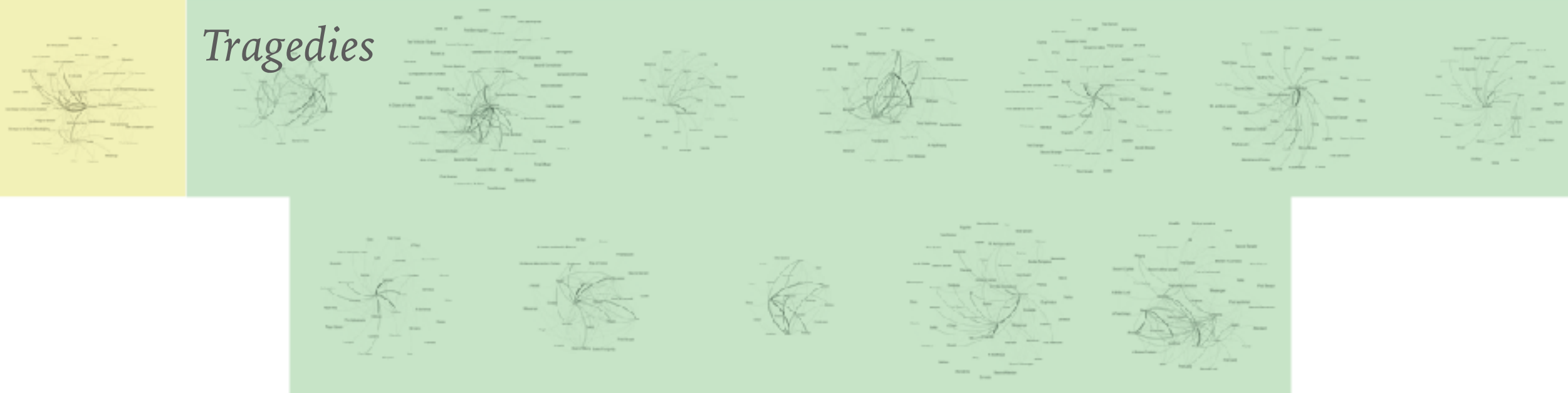
Comedies



Histories

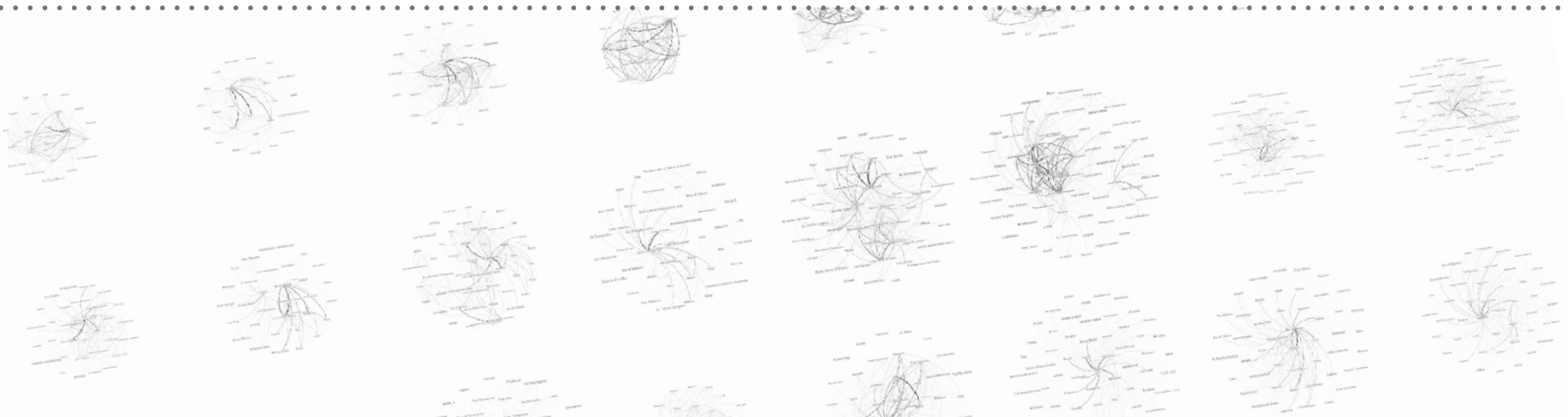


Tragedies



CODEBASE 2: MACHINE LEARNING CLASSIFIERS USING NETWORK GRAPH FEATURES

- Tried several different classifiers; had best accuracy with a support vector machine, which achieves 100% accuracy with 3 graph features
 - Classifier tests using 17 mathematical features of the networks (such as density, eigenvector centrality, eccentricity, path length, etc.)
 - “Supervised” machine learning requires hand-classified training data
 - Could be applied to any corpus of network graphs
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The background of the slide is a repeating pattern of network graphs. These graphs are circular or semi-circular, with nodes arranged around the perimeter and in the center, connected by lines. Some nodes are labeled with names, while others are represented by small icons. The graphs vary in complexity and layout, showing different network structures.

FUTURE WORK

If you have TEI files of plays that you want to make into networks,
or network graphs that you want to use machine learning to classify,
we would love to hear from you!

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