Digital Prosopography of Renaissance Musicians

Discovery of Social and Professional Network

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Goals

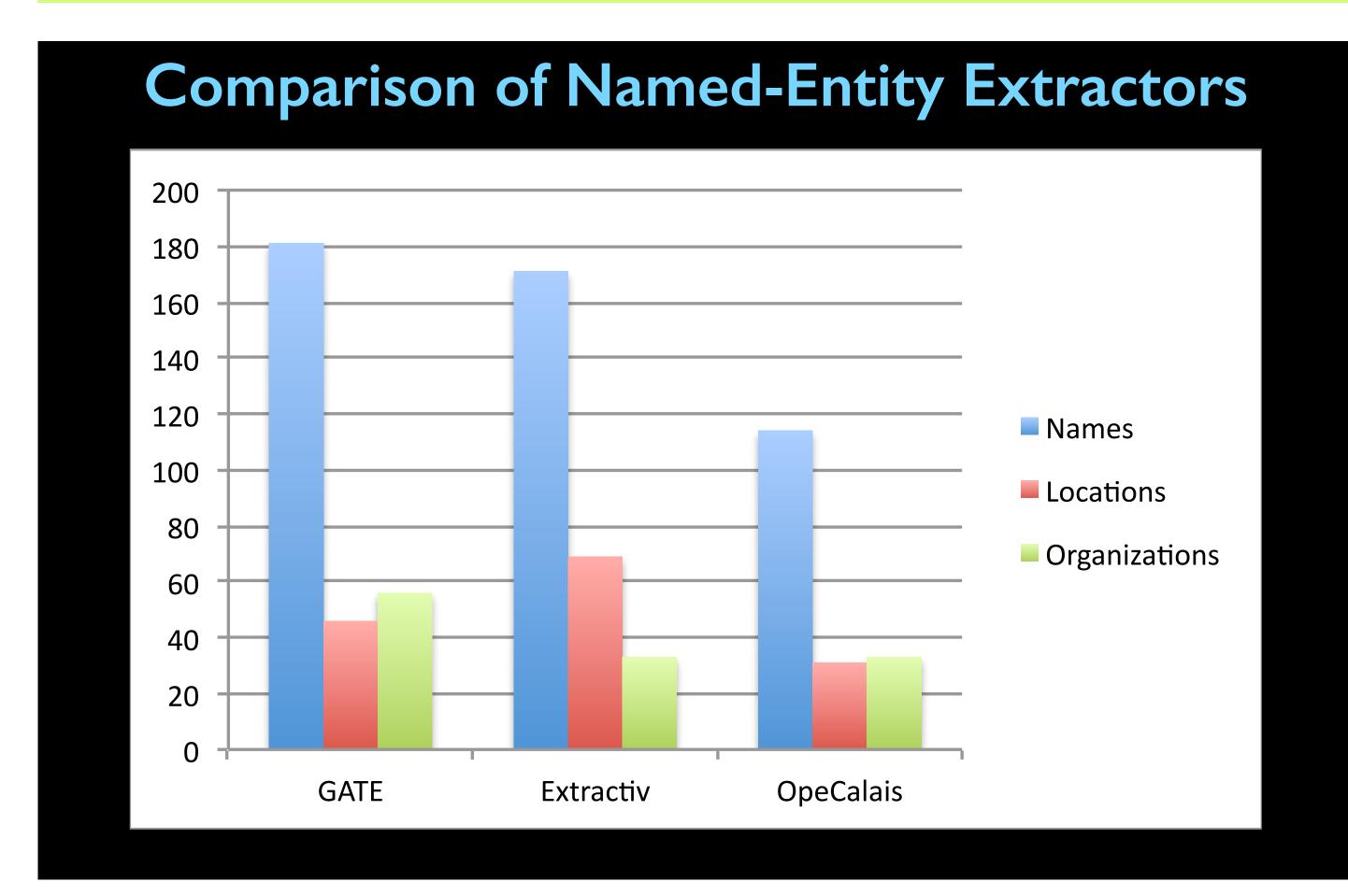
- To create a social and professional network of Renaissance musicians
- To create a database to be able to study the network
- To make connections and discover relationships or answer questions related to dates, geographies, professions, etc.

Example queries: Not easily answered by Google, Wikipedia, and other traditional methods

- Which music printers were in business in 1481 in Florence?
- Which composers were residing in Florence in 1481?
- Which composers visited Florence in 1481?
- Which trumpeters were active in Florence between 1481–86?
- What events took place in 1481 in Florence that required musical performance?
- What pieces requiring trumpets were performed in Florence in December 1481?

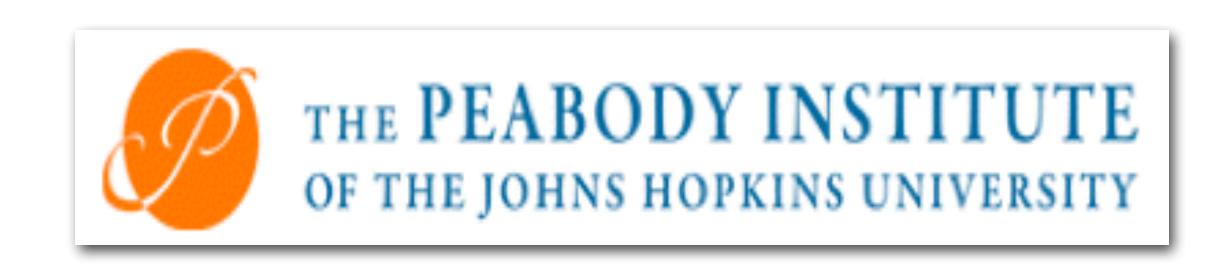
Solutions: Three major tools

- Natural Language Processing (NLP)
- Named-entity extraction
- Events extraction
- Linked Open Data
- RDF (Resource Description Framework): a data model
- SPARQL: a query language for RDF
- Crowdsourcing



Workflow for creating the RDF database for Human History Project HTTP webserver for Java openRDF.org **GATE**) Natural Language Processing ARCHIVE Sesame Framework for processing RDF data

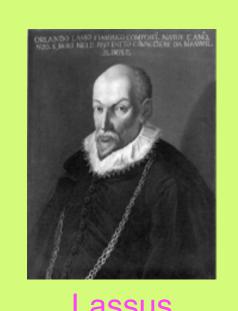
An example of named-entity extraction by GATE lessages agazetter%20expe... & Lassus_edit and ANNIE Gazetteer... ANNIE Gazetteer... ANNIE & Orlande_de_Lass... nnotation Sets Annotations List Annotations Stack Co-reference Editor Text / FirstPerson s of which is that he was kidnapped three times because of the singular beauty of his singing voice. At the age of twelve, he left the Low aga and went to Mantua, Sicily, and later Milan (from 1547 to 1549). While in Milan, he made the acquaintance of the madrigalist Spirito JobTitle Lookup Organization cumenical mother church of Rome and a spectacularly prestigious post indeed for a man only twenty-one years old. However, he Person Sentence dence survives for his whereabouts in 1554, but there are contemporary claims that he traveled in France and England. In 1555 he returned to the Low SpaceToken untries and had his early works published in Antwerp (1555-1556). In 1556 he joined the court of Albrecht V, Duke of Bavaria, who was consciously attempting to a musical establishment on a par with the major courts in Italy. Lassus was one of several Netherlanders to work there, and by far the most famous. He evidently happy in Munich and decided to settle there. In 1558 he married Regina Wäckinger, the daughter of a maid of honor of the Duchess; they had two sons, both of who became composers. By 1563 Lassus had been appointed maestro di cappella, succeeding Ludwig Daser in the post. Lassus remained in the service of Albrecht V ar his heir. Wilhelm V. for the rest of his life Unknown ssus had become quite famous, and composers began to go to Munich to study with him. Andrea Gabrieli went there in 1562, and possibly remained in wanni Gabrieli also possibly studied with him in the 1570s. His renown had spread outside of strictly musical circles, for in 1570 Emperor Original markups nvited him to visit. Some of these kings and aristocrats attempted to woo him away from Munich with more attractive offers, but Lassus was evidently more of his position, and the splendid performance opportunities of Albrecht's court, than in financial gain. "I do not want to leave my house, my garde and the other good things in Munich," he wrote to the Duke of Electorate of Saxony in 1580, upon receiving an offer for a position in Dresden



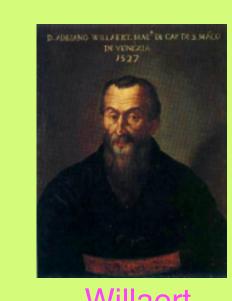
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Named-entity extraction: Experiment I









- Four Renaissance composers' entries in Wikipedia
- Using the default Gazetteer (a dictionary)
 - 90.25% precision (the extracted entities were correctly identified)
 - 4 65.33% recall (the entities in the document that were found)
- Editing the Gazetteer (~15 minutes / article)
- 98.39% precision; 91.86% recall
- Fixing the problem with plurals with the Morphological Analyzer (finding root form of words)
- 98.45% precision; 98.45% recall

Named-entity extraction: Experiment II











Ten composers x three sources (30) minus the four Wikipedia articles

- from Experiment 1:26 articles Using the modified Gazetteer and Morphological Analyzer from
- Experiment I
- 99.24% precision; 98.9% recall
- Correction time of the 5,441 entities extracted
- Average of 3 sec./entity to correct
- * 240 min. to correct 26 articles or about 10 min. / article

Next steps

- Extract relationships between named entities (e.g., REEL)
- Create web interface to correct relationships
- Create web interface to query the network of relationships

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