

Network mining: Historic data analysis and online social debates
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We present two different lines of research conducted in the Data Mining group of the department of Computer Science in Aalto University. First we consider the problem of automatically linking historical records in order to reconstruct family trees. The problem leads to a number of interesting computational questions, including record linkage, alignment of multiple partially-overlapping networks, and active network alignment. Our objective is to build a large genealogical graph, which could be used to resolve various interesting questions in the areas of computational social science, genetics, and evolutionary studies. A related demo, AncestryAI, is exhibited in the HELDIG2017 summit. Our second area of study is from the modern social-media era. We focus on analyzing debates that take place in social media. We discuss computational methods for identifying controversial topics, understanding how polarization around controversial topics evolves, reducing controversy by connecting opposing views, and balancing information exposure in a network.