

Profiles Research Network Software: Discovering and Visualizing the Social Networks of Scientists

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Keywords: research networking, social network analysis, network visualization, semantic web, linked open data

Abstract

Profiles Research Network Software (<http://profiles.catalyst.harvard.edu>) is an open source social networking website for scientists within a research organization. It was initially developed at Harvard, and it is now used at universities around the world. Built on semantic web technologies, it automatically generates online expertise profiles for investigators using a variety of data sources, including local administrative databases, public repositories such as publications from PubMed and patents from USPTO, and commercial databases such as Web of Science. Profiles are linked together through Passive Networks, which are automatically generated based on information known about investigators. For example, publications are used to map research areas to individuals. By comparing the research areas of each person to every other investigator, networks of people with similar interests are then created. Users can also build Active Networks, by looking up people they know and manually describing their relationships to them, such as “collaborator” or “past advisor”. Data visualizations help users understand and navigate through these networks: concept clouds emphasize a person's research areas, network timelines show how those areas have changed over time, geographic maps illustrate where similar people are located, radial graphs present ego-centric views of collaborations and co-author cluster graphs reveal how teams form and interact. Social network analysis indicates how collaboration varies across disciplines and which factors influence the formation and success of teams. In summary, the Profiles Research Network Software uses novel techniques to identify, analyze, and display networks of scientists.