Communicating the Structure and Evolution of Science

Talk Abstract:
Cartographic maps of physical places have guided mankind's explorations for centuries. They enabled the discovery of new worlds while also marking territories inhabited by unknown monsters. Domain maps of abstract semantic spaces, see scimaps.org, aim to serve today's explorers' understanding and navigating the world of science. The maps are generated through scientific analysis of large-scale scholarly datasets in an effort to connect and make sense of the bits and pieces of knowledge they contain. They can be used to objectively identify major research areas, experts, institutions, collections, grants, papers, journals, and ideas in a domain of interest. Local maps provide overviews of a specific area: its homogeneity, import-export factors, and relative speed. They allow one to track the emergence, evolution, and disappearance of topics and help to identify the most promising areas of research. Global maps show the overall structure and evolution of our collective scholarly knowledge. This talk will present an overview of the techniques used to study science by scientific means together with sample science maps and their interpretations.

About Media X:
"Media X at Stanford University is a collaboration of Stanford and industry that brings together Stanford's leading interactive technology research with companies committed to technical advancement and innovation.

The Media X research network sponsors Stanford faculty and researchers studying basic issues about the design and use of interactive technologies. The multidisciplinary projects that result are influencing the next generation of commerce, learning and entertainment.

Media X research focuses on people and technology - how people use technology, how to better design technology to make it more usable (and more competitive in the marketplace), how technology affects people's lives, and the innovative use of advanced communication.
technologies in research, education, art, business, commerce, entertainment, communication, national security, and other walks of life. Media X is affiliated with the H-STAR Institute (Human-Sciences and Technologies Advanced Research Institute) at Stanford University."
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