TECHNIQUES

and methods for development and study of computer-mediated scientific knowledge discovery

OPEN ACCESS REPOSITORIES

That contain not only fulltext but also images, data, and software

WEBOMETRICS

Explore viable alternatives to traditional ranking mechanisms

SEMANTIC COMPUTING

Computers are great at storing, managing, indexing, accessing information but in the future they will have to make sense of it. Linked data? Faceted search?

DIRECT DATA ACCESS

Use publications as a gateway to scientific data and knowledge discovery ("literature as a filter to the data", M. Kurtz) and viceversa

VERSIONING

Capture scientific data practices and the artifacts produced across the scientific lifecycle using a system similar to software versioning systems?

INTEGRATION WITH WEB2.0

Leverage SKD systems with existing tools on the web. An example of this is Astrometry.net which annotates (solves the position) of user-uploaded astronomical images on Flickr.

INTEGRATION WITH SNS

Not only it is important that scientific services have an online presence on social networking sites but it is fundamental that they leverage their user base and tools to enable (a) scientific discovery, (b) citizen science and (c) public data collection

IN-SILICO RESEARCH

Data science vision: apply large-scale statistical methods and computational models on public scientific data to both predict and track scientific knowledge discoveries and constructs (e.g., bio-medical research presenting drug vs. disease heatmap)

DATA-DRIVEN DISCOVERY

Follow the Google example to use distributed data traits to organize, rank, and provide access to information, rather than "a priori" classification scheme

DATA VISUALIZATION

The use of statistical visualization and other visualization techniques may enable knowledge discovery and observation of phenomena that data alone may not be able to reveal (e.g., in astronomy and geospatial and atmospheric research)

SIMPLE METADATA AND LIGHTWEIGHT SEMANTICS

Micro-level semantics allow light annotation that in most cases is enough to describe scientific data