arXiv

facilitating research via augmentation and interlinking of scholarly literature

Thorsten Schwander
Simeon Warner

Cornell Information Science (CIS), Cornell University & arXiv

PPA Information Summit, SLAC, May 2007

arXiv's mission

arXiv

is a fully automated system for author/researcher driven ingestion, dissemination, and archival of current research articles in physics, mathematics, computer science, nonlinear sciences, and quantitative biology, with more than 419,000 full text articles from 1991 onwards freely available worldwide under an open access policy.

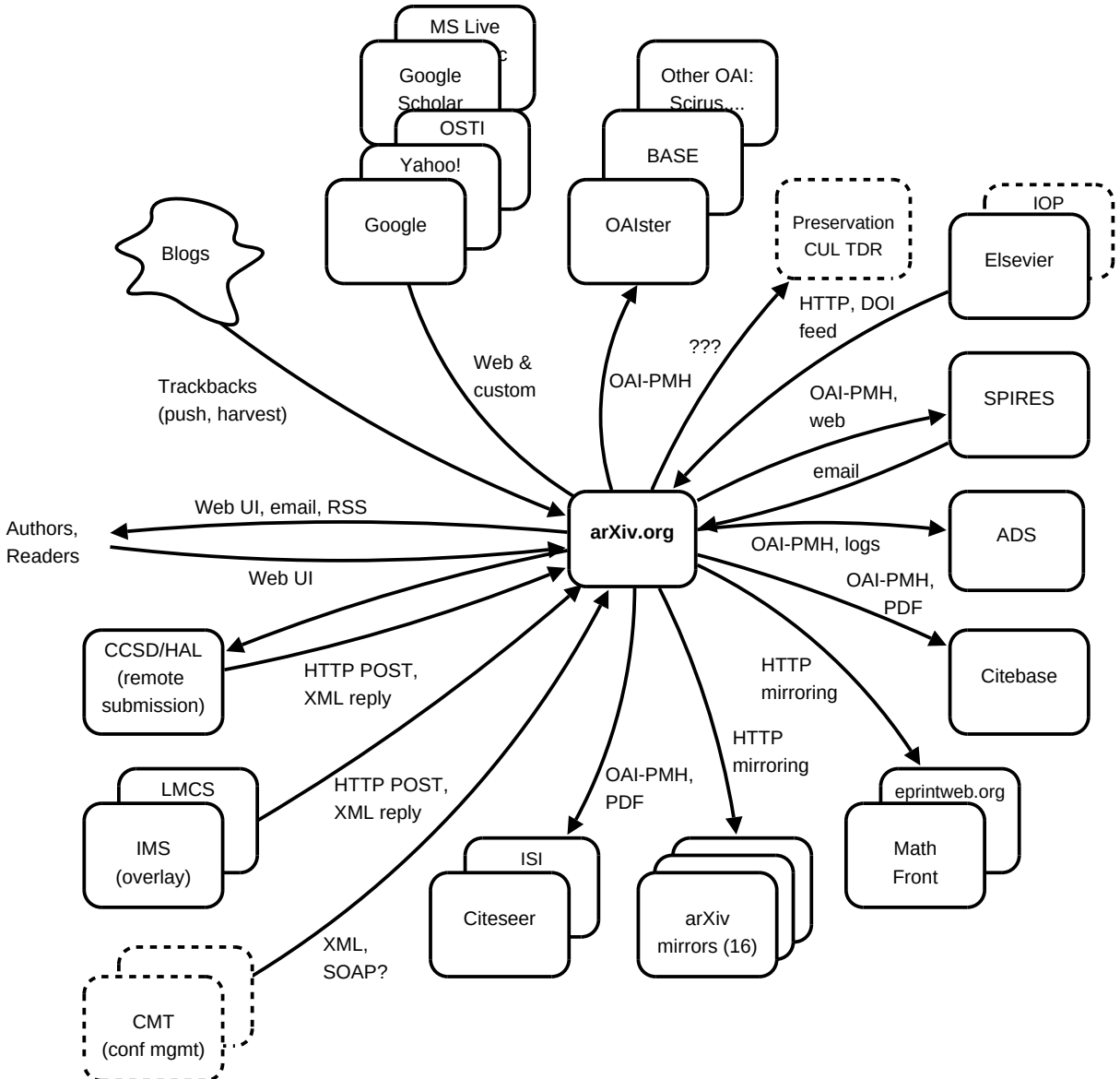
Features

- near instant, worldwide, open access, availability of full text
- long term stable archival (persistent identifiers)
- metadata search
- (experimental) full text search,
  also via Google (Scholar)/MS Live/Yahoo!
- community screening of contributing authors – recommendation system
- volunteer moderators overseeing adequate classification of submissions, ensuring a reasonable signal/noise ratio

Some shortcomings

- various degrees of coverage, depending on category
- minimal metadata redaction
- little if any augmentation
- little external linking
- incomplete citation information

arXiv interconnect



Data exposure

- HTTP (web ui)
- 3rd party front ends and overlays
- OAI-PMH – (incremental) metadata harvest
- RSS feeds – new paper announcements
- SMTP – mailing lists
- full text (PDF) for major search engines
- The arXiv on Your Harddrive
  `http://www.theory.physics.ubc.ca/arxiv/`
- anonymized usage logs

Data ingestion

- HTTP POST (submissions via web ui)
- SMTP (SPIRES)
- trackback pings and blog harvest
- SOAP/XML ingest (CMT)

Envisioned improvements

harvesting from and/or linking to other services

- author authority database(s), affiliation information
- citation information (currently SPIRES, citebase)
- DOI feeds (currently Elsevier, IOP (soon?))
- external databases, e.g.
  - astrophysical objects
  - experimental data (data repositories)
  - chemical structure
- related articles, recommendation systems
- relevant web sites and other information resources
- blogs/commenting systems

Contacts

arXiv/Cornell Information Science

- Thorsten Schwander
  <schwande@cs.cornell.edu>
- Simeon Warner
  <simeon@cs.cornell.edu>