

AgileDBLP: A Search-based Mobile Application for Structured Digital Libraries



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Outline

- Scope and Motivation
- Available Resources
- Proposed Approach
- AgileDBLP Prototype
- Conclusions
- Future work

Scope and Motivation

- members of the academic community have increasingly turned to digital libraries to follow the latest work of other members within their research community;
- million of mobile users
- promote the development of mobile applications using existing resources

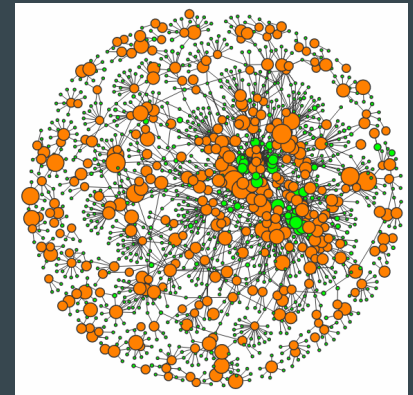
Available Resources

- digital libraries:
 - ACM Portal
 - Google Scholar
 - DBLP
- Web Services
- Exposed API's
- Open Data
- Linked Open Data

DBLP - Digital Bibliography and Library Project

DBLP is a computer science bibliography website hosted at University Trier, in Germany.

- started in 1993 as a experimental server meant to test web technology
- DBLP dataset is available from the location <http://dblp.uni-trier.de/xml/dblp.xml>
- contains all the bibliographic records
- development based on ad-hoc solutions
- insufficient documentation



DBLP Metadata

DBLP distinguishes between eight different types of entries:

- article
- book
- in proceedings
- in collection
- master's thesis
- ph.d thesis
- proceedings
- WWW

DBLP provides various metadata files for each: author, title, pages, volume, publisher, year, journal.

Proposed Approach

- "migrate" web digital libraries to mobile using web services and exposed API's
- create web services for your data
- create API for your data
- create documentation for the community
- create a prototype for Android using DBLP exposed API

AgileDBLP Prototype

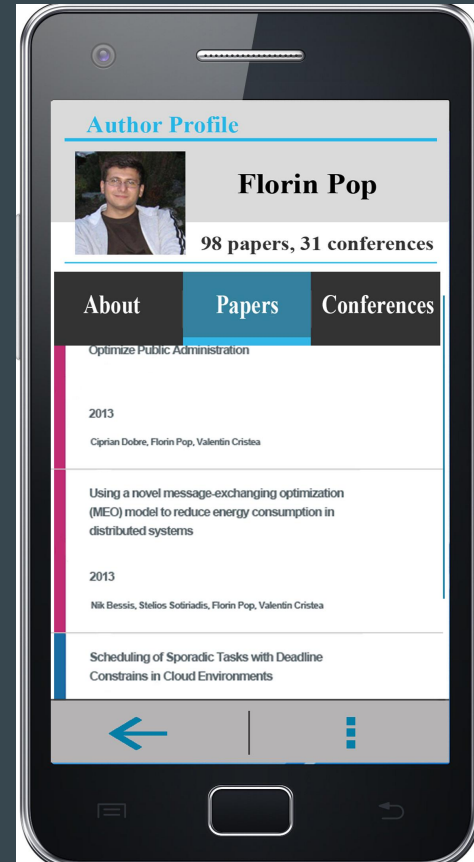
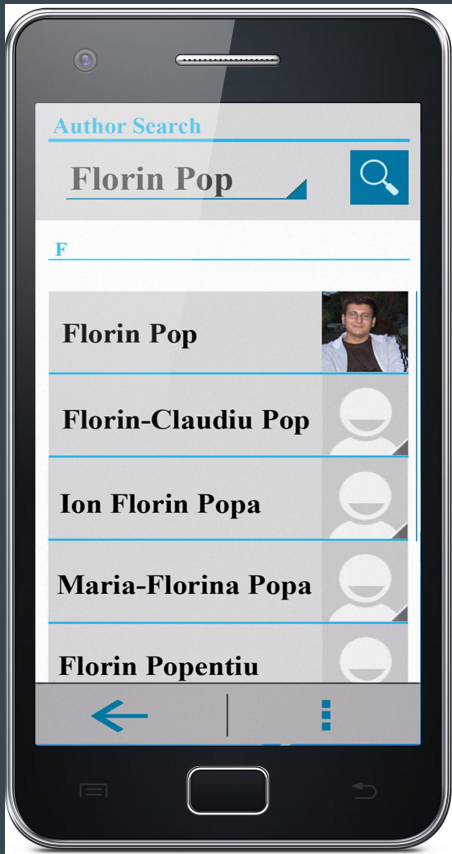
Implementation details:

- used DBLP exposed API (xml/json)
- custom queries for google images (used for author profile) and DBLP dataset
- Android SDK

Use cases:

- search by author name
- search article by title
- view author profile: articles, conferences, coauthors

AgileDBLP Prototype - Mockups



AgileDBLP Prototype - search by author name

DBLP Search

Foster J. Provost
foster_j_provost

Foster F. Dai
foster_f_dai

Foster McGeary
foster_mcgeary

Foster R. Goss
foster_r_goss

Foster Lau
foster_lau

Profile

Foster J. Provost

articles

Repeated labeling using multiple noisy labelers.
2014, Data Min. Knowl. Discov. (DATAMINE)

Machine learning for targeted display advertising: transfer learning in action.
2014, Machine Learning (ML)

Learning When Training Data are Costly: The Effect

Profile

Foster J. Provost

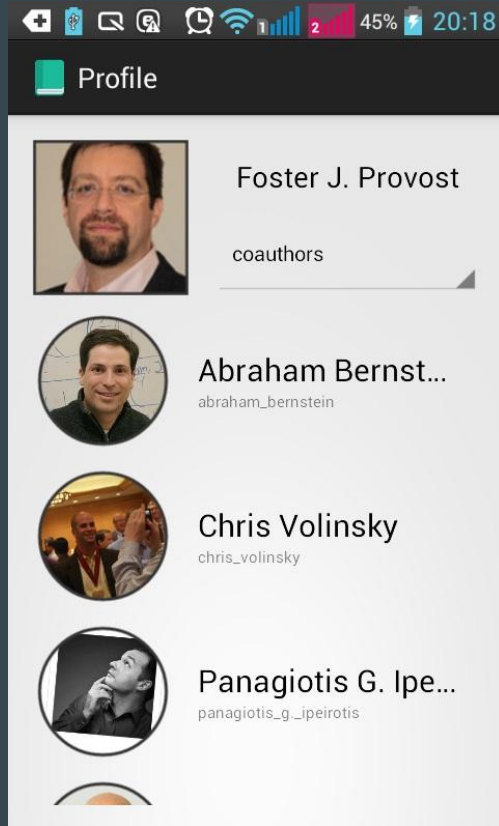
conferences

Scalable supervised dimensionality reduction using clustering.
2013, KDD

Using co-visitation networks for detecting large scale online display advertising exchange fraud.
2013, KDD


Panel: a data


AgileDBLP Prototype - coauthors





A screenshot of a mobile application interface showing a user profile. The status bar at the top shows various icons, signal strength, 45% battery, and the time 20:18. The profile header includes a teal square icon and the word "Profile". Below this is a large square profile picture of Foster J. Provost, followed by his name "Foster J. Provost" and the text "coauthors" with a dropdown arrow. A list of coauthors follows, each with a circular profile picture, name, and username: Abraham Bernst... (abraham_bernstein), Chris Volinsky (chris_volinsky), and Panagiotis G. Ipe... (panagiotis_g_ipeirotis). A partial profile picture is visible at the bottom.

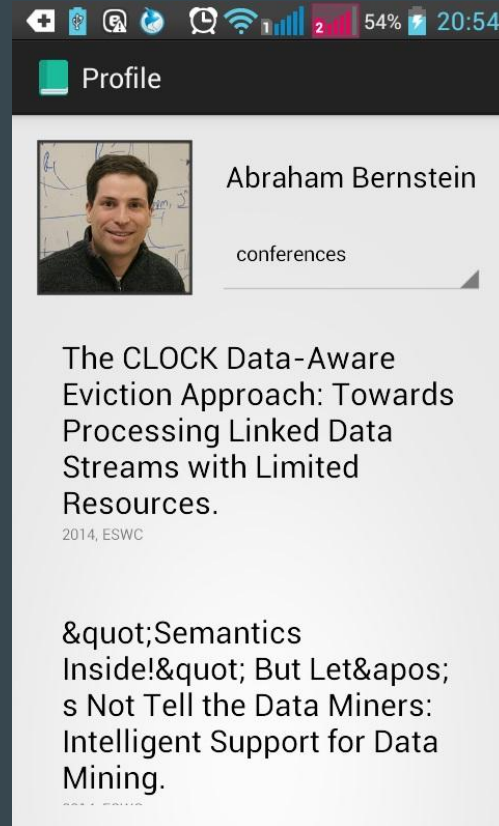
Profile

 Foster J. Provost
coauthors

 Abraham Bernst...
abraham_bernstein


 Chris Volinsky
chris_volinsky

 Panagiotis G. Ipe...
panagiotis_g_ipeirotis



A screenshot of a mobile application interface showing a user profile. The status bar at the top shows various icons, signal strength, 54% battery, and the time 20:54. The profile header includes a teal square icon and the word "Profile". Below this is a square profile picture of Abraham Bernstein, followed by his name "Abraham Bernstein" and the text "conferences" with a dropdown arrow. Below the header is a list of conference papers, each with a title and year: "The CLOCK Data-Aware Eviction Approach: Towards Processing Linked Data Streams with Limited Resources." (2014, ESWC) and ""Semantics Inside!" But Let's Not Tell the Data Miners: Intelligent Support for Data Mining." (2011, ESWC).

Profile

 Abraham Bernstein
conferences

The CLOCK Data-Aware Eviction Approach: Towards Processing Linked Data Streams with Limited Resources.
2014, ESWC

"Semantics Inside!" But Let's Not Tell the Data Miners: Intelligent Support for Data Mining.
2011, ESWC

Conclusion

- use existing datasets
- use exposed APIs and web services
- easy and quick development for mobile applications
- contributes to community

Future Work

- develop a scientific paper aggregator (DBLP, Google Scholar and ACM Digital Library)
- display bibliometrics indicators in author profile
- improve bibliometrics indicators (detecting ambiguous author names and self-citations)
- extend the prototype

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Q&A

