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Faceted Expertise Search for Academia

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Terrier http://terrier.org/academtech/

Overview

AcademTech is a people search engine which has a novel faceted search interface. It uses modern expert search techniques to allow searching for appropriate expertise in academia. The faceted interface facilitates search and browse behaviour.

1. Introduction

- **Expert search** is an important problem in academia. People often require to identify relevant **persons for topics** (e.g. for forming collaborations).
- We deploy the Voting Model [1] expert search approach for this application.
- **Faceted search** is a common feature in shopping websites where search results are grouped into a number of **categories** to facilitate a **search and browse** behaviour.
- Facets help the users decide whether to contact a given expert by allowing to filter on the required features of appropriate people.

2. Profiling Candidates

- Expertise profiles are built from several sources:
  - ➔ Candidate persons and their **homepages** are mined from university contact lists, and through other heuristics.
  - ➔ **Publications** are mined from public digital libraries (e.g. DBLP).
  - ➔ **Related expertise evidence** from the web (e.g. using a search engine API).

3. Retrieval

- The Terrier IR platform is used to rank **documentary evidence** of **expertise**.
- The expCombMNZ **voting technique** (from the **Voting Model** [1]) converts this into a ranking of candidates.
- Pre-defined facets are used (e.g. location, conference, total publications).

Figure 1: Results for the query 'constraint programming'. The user has refined the query to experts located in Glasgow, those who have at least one publication and collaborated with more than ten co-authors.

4. User Interface

- Search results suggesting possible candidate experts (Figure 1).
  - ➔ Facets permit **search and browse behaviour** to identify interesting candidates.
- A profile page provides evidence about a candidate in a comprehensively structured, interactive display using AJAX (Figure 2).
  - ➔ **Supporting evidence** about the candidate's likely relevance.
  - ➔ Photo/images related to the expert.
  - ➔ Term Cloud of frequent terms in the expert's profile.

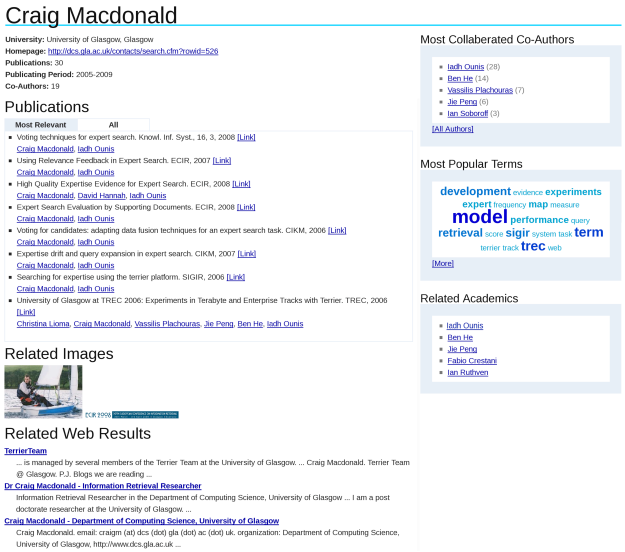

Figure 2: The profile page of an academic selected from the search results page of the query 'expert search'. The Publications section lists the publications related to this query.

5. Conclusions

- Faceted expertise search facilitates identifying appropriate experts.
- The scope of the system is being expanded to other fields.
- Future research will involve the identification of further facets which reflect quality aspects of academics, and the automatic selection of appropriate facets on a per-query basis.

Reference

[1] Craig Macdonald, The Voting Model for People Search, PhD thesis, University of Glasgow, 2009.