

CMPUT 401 (Winter 2018): Find-an-Expert

Project Background and Objectives:

The purpose of this project is to develop a service to help potential graduate students find supervisors that match their research interests. From a software-engineering perspective, the task is to develop a service for the FoS Forum that will enable a flexible search for identifying and comparing faculty members with expertise in a particular research area of interest.

Project Sponsor and Stakeholders:

The client: Associate Dean <scigri@ualberta.ca>

The technical consultants:

David Turner <dwt@ualberta.ca>

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Key Functional Requirements of the System:

- Develop faculty expertise profiles using information from
 - faculty bios;
 - faculty publications;
 - faculty grant applications; and
 - stories from <https://www.ualberta.ca/science/science-news> (associated with faculty).
- Based on these profiles,
 - implement Mirzaei's LDA-based unconstrained expertise-finding algorithm
 - implement Sajedi's keyword-based expertise-finding algorithm.
- Generate keywords for each faculty members
 - from their papers
 - extracting n-grams from the collected faculty expertise profiles
 - associating faculty profiles with keywords from discipline-specific indices (<https://www.acm.org/publications/class-2012> http://ieeauthorcenter.ieee.org/wp-content/uploads/taxonomy_v101.pdf) and associate them with faculty members
- Develop an integrated *find-an-expert faceted search service*, subject to faculty-profile

properties such as department, career level, and keywords, and combining

- the two expertise-finding algorithms above, and
- free-text matching (using solr).
- Develop a user interface through which
 - To communicate the reasons why a faculty member is identified as a relevant expert for a give search query
 - To compare multiple relevant experts

Technical Requirements:

The system has to be built as a service, closely associated with the FoS Forum. It has to use Forum APIs to get (faculty members and their profile elements) and put (faculty keywords) information to the Forum.

The user interface has to be developed through basic HTML+CSS+Javascript; the libraries used have to be approved by David Turner, to ensure that they are compatible with the Forum.

Quality Requirements:

Usability; clean data management strategy; easiness to edit the lists directly on the back end.