

# Call for Papers

ACM Transactions on Intelligent Systems and Technology (ACM TIST)

Special Issue on

## Diversity and Discovery in Recommender Systems and Exploratory Search

### Overview

Most research and development efforts in information access technologies have been focused on the accuracy in predicting and matching user information needs. Moreover, accuracy has been defined as a property that considers individual delivered items in isolation, or even more narrowly, as the ability to reduce the errors between predicted user preference values and explicit user votes. However there is a growing realization that there is more than accuracy to the practical effectiveness and added-value of delivered information. In particular, diversity and discovery have been identified as key dimensions of information utility in real scenarios, and a fundamental research direction to keep making progress in the field. The importance of novelty and diversity is particularly manifest in scenarios such as automatic recommendation and exploratory search, in which user needs involve some degree of uncertainty and/or underspecification, leaving room for the system's initiative to complete and predict these needs on behalf of –or in collaboration with– the user.

The intelligence to discover something novel is indeed essential to a recommender system: in many, if not most scenarios, the whole point of recommendation is inherently linked to the provision of discovery, as recommendation makes most sense when it exposes the user to a relevant experience that she would not have found, or thought of by herself –obvious, however accurate, recommendations are generally of little use. Not only does a varied recommendation provide in itself for a richer user experience. Given the inherent uncertainty in user interest prediction –since it is based on implicit, incomplete evidence of past interests, where the latter are moreover subject to change– avoiding a too narrow array of choice is generally a good approach to enhance the chances that the user is pleased by at least some recommended item. Sales diversity may enhance businesses as well, leveraging revenues from market niches.

The value of diversity has likewise been acknowledged in exploratory retrieval scenarios where information needs have a specific orientation, but involve a degree of flexibility, generality and open-endedness comparable to user needs in recommendation tasks. Discovery is indeed a fundamental drive –and an inherent part of user goals– in informational and exploratory search, where new theories and methods are being developed that model novelty and relevance as two sides of the same coin.

Diversity and discovery represent a cutting-edge research area in intelligent information access and delivery, eliciting increasing attention from researchers and practitioners in the recommender systems, information retrieval, and machine learning communities. This special issue seeks to gather a selection of papers reporting leading research on diversity and discovery perspectives in recommender systems and exploratory search, providing a view of the latest advances in this scope.

## Topics

We invite the submission of high-quality manuscripts reporting relevant research in the area of diversity, discovery, and novelty in recommender systems and exploratory search. The special issue welcomes submissions presenting theoretical, technical, experimental, methodological and/or applicative contributions in this scope, addressing –though not limited to– the following topics:

- Diversity and discovery modeling in recommender systems.
  - Theoretical foundation for novelty and diversity.
  - Recommendation novelty and diversity models.
  - Popularity, risk, unexpectedness, surprisal, serendipity, freshness.
  - Link to diversity models in Information Retrieval.
- Diversity and discovery enhancement in recommender systems.
  - Diversification methods.
  - Recommendation of long-tail and difficult items, cold-start problem.
  - Individual vs. global diversity.
  - Machine Learning for diversity and discovery.
- Diversity and discovery across recommendations.
  - Diversity and discovery in sequential recommendation.
  - Diversity and discovery in interactive recommendation.
  - Aggregate diversity.
  - Diversity and discovery in time and context.
  - Novelty and trust.
- Diversity and discovery in exploratory search.
  - Novelty and diversity in informational search and exploratory browsing.
  - Diversity and discovery in interactive search.
  - Novelty, diversity and personalization.
  - Novelty, learning and knowledge gain.
- Diversity and discovery evaluation.
  - Experimental methodologies and design.
  - Novelty and diversity metrics.
  - Datasets.
  - User studies.
- Applications.
  - Discovery-oriented domains, applications, and scenarios.
  - Business perspective on diversity and discovery.
  - Domain-specific studies.

## Submissions

Manuscripts shall be sent through the ACM TIST electronic submission system at <http://mc.manuscriptcentral.com/tist> (please select “Special Issue: Diversity and Discovery in Recommender Systems and Exploratory Search” as the manuscript type). Submissions shall adhere to the ACM TIST instructions and guidelines for authors available at the journal web site: <http://tist.acm.org>.

Each paper will be evaluated by at least two reviewers. The papers will be evaluated for their originality, contribution significance, soundness, clarity, and overall quality. The interest of contributions will be assessed in terms of technical and scientific findings, contribution to the knowledge and understanding of the problem, methodological advancements, and/or applicative value.

### **Important Dates**

- Deadline for submission: 20 September 2012
- Review notification: 15 November 2012
- Revised manuscript due: 20 December 2012

### **Guest Editors**

[Pablo Castells](#), Universidad Autónoma de Madrid, pablo.castells@uam.es

[Jun Wang](#), University College London, wang.jun@acm.org

[Rubén Lara](#), Telefónica, Investigación y Desarrollo, rubenlh@tid.es

[Dell Zhang](#), Birkbeck, University of London, dell.z@ieee.org