

Improving Controllability and Predictability of Interactive Recommendation Interfaces for Exploratory Search

Antti Kangasräsiö, Dorota Głowacka, Samuel Kaski

IUI 2015 Atlanta - 31.3.

Introduction

Video [/home/akangasr/play_iui_video_1.sh](#)

Proposed Solutions

Improving Controllability

- User defines how the intent model should change
- Algorithm finds out how to do this in practice

Improving Predictability

- Simulate effects of user feedback
- Visualize approximate effects before user commits

Improved System

Video [/home/akangasr/play_iui_video_2.sh](#)

Experiments

A user study was conducted on 10 naïve users

- 2 tasks, 'focused' and 'broad', one with each system
- User performance was assessed by experts in double-blind manner
- The users answered two usability questionnaires (SUS, ResQue) and participated in an interview

Results

	Improved	Baseline
Task performance on 'focused' task	3.1	2.2
Task performance on 'broad' task	3.0	3.8
SUS score	65	63
- SUS 3: I thought the system was easy to use	3.9	3.3
ResQue score	36	33
- ResQue 5: The recommender system explains why the items are recommended to me	2.7	2.3
- ResQue 6: The information provided for the recommended items is sufficient	3.4	2.6

7 of the 10 users stated that predicting the effects of feedback helped them in the task

5 of the 10 users preferred the improved system overall, 1 user preferred the baseline, 2 users had mixed opinions and 2 users had no preference

Summary

Interpreting user feedback as optimization problems

Visualizing approximate effects before committing to actions

- Improved controllability and predictability
- Improved task performance on some tasks
- Improved usability and user acceptance