Master thesis

INTERACTING WITH A MOOC SEARCH SYSTEM

design, implementation and summative empirical evaluation of the UI
AGENDA

1. Status Quo of MOOCs
2. The Vision
3. Motivation
4. Literature Research so far
5. Next Steps
6. Challenges
7. Demo
8. References
STATUS QUO OF MOOCS

• A lot of MOOCs\(^1\) available on different platforms

• Aim: support self learning with valuable content
  - Offer knowledge on new topics
  - Provide access to lectures of renowned speakers
  - Serve advanced knowledge about a certain subject

• In the easy form of videos on the web

\(^1\) Massive Open Online Courses
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THE VISION

• **Huge amount** of MOOC platforms

• **Difficulties in finding** the right keywords for needed information

Solution: A single **intelligent search and recommendation system** for MOOCs from all major platforms

→ To support students of universities with learning and help them succeed in their studies
Aim of project Irom:

Conceive, develop and test an **intelligent MOOC search system** (a vertical search model)

Tasks:

- Carry out **textual analysis** of MOOC descriptions
- Develop a **search and recommendation engine**
- Provide a **search platform** for students, collect users’ click-through data and evaluate it
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MOTIVATION

• Good opportunity to analyse click-through data of users‘ interactions in a scientific approach

• Get deeper knowledge of the mechanics behind the trending vertical search model

• Offer students a platform, so they can actually profit from the already developed search and recommendation engines

• Grow with the tasks and learn a lot on the way
GOAL OF THIS MASTER THESIS

• Complete Irom’s 3rd task: implement a web app based on the search and recommendation engines

• Design the web app fullfilling usability principles and users‘ expectations of the system and providing personalized features

• Evaluate user interaction data and feedback to assess and improve the functionality of both, backend and frontend solutions
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LITERATURE RESEARCH SO FAR

• **Usability** fundamentals

  • Searching process (autocompletion, suggestions on search with no results)
  • Presentation of search results
  • Recommendations

• Principles of **vertical search** and benchmarking of search interfaces among leading companies in search and MOOCs (Google, Amazon, Coursera, Udacity, etc.)

• **Analysis** and **evaluation** of user interactions using tools like Piwik
VERTICAL SEARCH

• Refers to a **special topic** of a general search (shopping, travel, automobile, medical info, videos etc.)

• Why it is necessary:
  ➔ Rapid, ongoing **increase of links** on the internet makes it difficult to find the desired information
  ➔ Vertical search **limits** the number of **results** to a specific topic
  ➔ **High precision** of results
  ➔ More **user friendly** because desired info is found faster than with general search
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NEXT STEPS

• Implement an innovative search web app with intelligent UI

  • Set up functional requirements, design the look and feel of the search web client
  • Develop the web client using Angular 2 and Material design
  • Integrate the search engine and the recommendation backend

• Extend the app by the functionality to gather user interaction metadata → integrate tracking code, create opportunities for direct user feedback, set up a backend for the metadata

• Evaluate the metadata empirically using Piwik and draw conclusions regarding functionality, usability and efficiency
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CHALLENGES

• Get a representative set of users to gather **enough metadata** for the evaluation

• **Understand** the gathered **click-through data** and interpret it correctly
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source: http://ami.responsiveesign.is/
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