Agenda

1. Organization

2. Lab Project

Organization
Communication

❑ Slides, Announcements & Materials will be available at
`temir.org/teaching/information-retrieval-ws23/`
`information-retrieval-ws23.html`

❑ Communication channels are Discord and email

  – Official announcements via Mail (check your student mails regularly!)
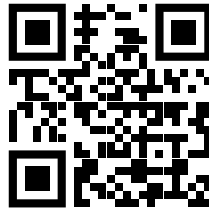 – Discord for Q&A and group communication

Organization
Lab Sessions

- Lab sessions throughout the semester
  - 13:15 - 14:00 timeslot → lab sessions / Q&A
  - 14:30 - 16:45 timeslot is intended as placeholder for project work
    no content from our side planned, but room can be used

- Not every week will have a lab session taking place (see course page)

- We are available for questions outside the scheduled times via Discord
  - Feel free to use the discussion board!

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https://discord.gg/3f79K635XD

Lab Project
Overview

- ❑ Goal

  - – Building and evaluating an information retrieval system for web search
  - – Related work search, data handling, indexing, selection and implementation of suitable retrieval models, evaluation of search quality
  - – Submission of a written report and software on the TIRA platform

Lab Project
Overview

- ❏ Goal

  – Building and evaluating an information retrieval system for web search

  – Related work search, data handling, indexing, selection and implementation of suitable retrieval models, evaluation of search quality

  – Submission of a written report and software on the TIRA platform

- ❏ Milestones

  – Lab is organized around 4 milestones throughout the semester

  – At each milestone, we expect each group to hand in a deliverable

Lab Project
LongEval - Task & Data

- ❏ Task: Web Search
  - – Special focus on robustness of systems to changes in queries over time
  - – Evolving document and query sets to reflect changes

- ❏ Data: LongEval web search collection
  - – Provided by a commercial search engine (Qwant)
  - – Corpus of pages, queries, user interaction logs
  - – TIRA as an evaluation platform & leaderboard

- ❏ Additional evaluation data will be collected in the lab itself

Lab Project
Milestone I: Topics

Create topics for the supplied search task and data collection.

❑ A topic is a description of a users' information need

- A **text** entered into the IR system as query
- A **description** of the underlying information need
- A **narrative** describing what is relevant to the query

ID	1
Text	retrieval system improving effectiveness
Description	What papers focus on improving the effectiveness of a retrieval system?
Narrative	Relevant papers include research on what makes a retrieval system effective and what improves the effectiveness of a retrieval system. Papers that focus on improving something else or improving the effectiveness of a system that is not a retrieval system are not relevant.

❑ **Due Date:** 23.10.2023

❑ **Deliverable:** Valid topic file (XML, see course page for example)

Lab Project
Milestone II: Relevance Assessments

Assess the relevance of documents retrieved for your topic

❑ Given your topics, we will supply a set of retrieved documents

– Retrieval is done by pooling several baseline systems

– For each topic and system, documents are retrieved and pooled

❑ Annotate these documents w.r.t. their relevance to the topic

Query ID	1
Text	retrieval system improving effectiveness
Description	What papers focus on improving the effectiveness of a retrieval system?
Narrative	Relevant papers include research on what makes a retrieval system [...]
Document ID	2005.ipm_journal-ir0anthology0volumeA41A1.7
Document	In this paper we will present a language-independent probabilistic model [...]
Relevancy	1

❑ Due Date: 06.11.2023

❑ Deliverable: Completed batch on the annotation platform

Lab Project
Milestone III: IR System

Build and evaluate your own IR system using
your topics and relevance assessments.

❏ Implement your IR system

- Training data will be supplied; compute resources available
- Final system should be deployed to the TIRA platform

❏ Evaluate your IR system

- The previously annotated topics are used for testing
- Testing is carried out using the TIRA platform

❏ Shortly reflect on the assignment in a written report

❏ Due Date: 27.11.2023
❏ Deliverable: Short reflection (approx. half page), TIRA submission

Lab Project

Derive and test a research question with your IR system.

❑ Come up with a hypothesis that can be tested with your system

❑ Conduct statistical analysis to address the hypothesis
  – Hyp. should separate two configurations (modified c., control c.)
  – Hyp. should motivate a distribution over both groups to test against

❑ Summarize your system and findings in a short report

"System effectiveness will be higher when boosting
the rank of documents under 1000 characters."

❑ Due Date: 08.01.2024
❑ Deliverable: Report (max. 2 pages)

Questionnaire

Raise your hand if you...

- ❑ ... have used Python before?

- ❑ ... have preexisting knowledge in ML?

- ❑ ... have worked on data analysis before?

- ❑ ... have done data annotation before?

- ❑ ... have done scientific writing before?

- ❑ ... have worked in a cluster environment before?

- ❑ ... have used Docker before?

Project Groups

- ❑ You can work in groups of up to 4 people

- ❑ Already know whom you want to work with?
  - – Yes! → see below
  - – No! → raise your hand to be assigned to a group

- ❑ Send us a mail with names of all group members until next week!

- ❑ Each group will then receive:
  - – A unique group name
  - – A Discord channel
  - – A TIRA account

What makes a good topic?

Formulating Topics

What makes a good topic?

- ❑ Reflecting real user needs and congruent to the task
- ❑ Retrievability (supported by document collection)
- ❑ Helps in distinguishing systems
- ❑ Hard vs. Easy?