Temporal Information Retrieval

Wintersemester 2014/15

Course Wrap Up

Course Outline

- Foundations of Temporal Analysis
- Web Dynamics and Crawling
- Indexing for Temporal Retrieval
- Query Processing and Compression
- Retrieval Models and Evaluation
- Extraction and Query Modelling

Foundations

- Time-series Forecasting
- Smoothing Techniques
- Periodicity Detection
- Matching Time-Series
- Burst detection

Crawling

- Web Crawling principles
- Temporal Dynamics of the Web
- Re-crawling Strategies
- Temporal Coherence

Indexing

- Indexing Basics
- Index Construction
- Temporal Indexing basics and challenges
- Index Partitioning for Temporal queries
- Vertical and Horizontal Partitioning, Index maintenance

Query Processing and Compression

- Compression Basics in Inverted Indexes
- Compression Algorithms
- Temporal Coalescing
- Query Processing — DAAT vs TAAT, WAND

Temporal Ranking

- Probabilistic Foundations
- Language Modelling for Ranking
- Temporal Interpretations
- Temporal Ranking
- Evaluation Measures, Test Collections and Methodology

Temporal Extraction and Query Modelling

- Temporal Expression Extractions
- Temporal Slot Filling
- Query Modelling using query logs
- Autocompletions, Suggestions, Expansions
- Temporal Profiling using Language Models

Project Roundup

- Feb 9th — Milestone 1
- Integration Week — Feb 1 to Feb 12
- Final Project Submission and Lockdown - March 6
- Report Submission — (recommended 2 pages)
  - Problem statement, Setup (max 1/2 page)
  - Contribution and Software Design (max 1 Page)
  - Results and Challenges (max 1 page)

Oral Exam

- Book your Show Early — 10, 11, 12 March
- Schedule will be up on the website with show timings 1st week of March
- Each 25 minute slot
- Choose 2 favourite topics
- Practice a bit of Math, only 1 problem

Thesis Possibility

- Get in touch with me for thesis topics/ research projects
- Re-using infrastructure for projects
- Better performance in projects + exams = more chances
- Build cool stuff which you can show off

Thesis Style

- Work on Cutting edge research problems
  - Big Datasets, real-life problems,
    - make yourself market worthy or research worthy
- 40% Theoretical foundations + 40% Experimental Evaluation + 20% writing = 100% fun
- We adapt depending on the strong points and style
- Possibility for a publication or Demo or both


The End?