General Information

Course Organization

Lecturer: Andreas Pieris (apieris@inf.ed.ac.uk)

Course Page: http://homepages.inf.ed.ac.uk/apieris/courses/atfd2019/

Lecture: Wednesday, 9:00 – 10:50
Lister Learning and Teaching Centre. Room 3.3

Assessment: Essay 1 (15%), due 8 February, ITO before 4pm

Essay 2 (15%), due 8 March, ITO before 4pm

Essay 3 (15%), due 5 April, ITO before 4pm

Final Project (40%), due 26 April, ITO before 4pm

Project Presentation (15%), in class, to be scheduled

General Information

- **This is a demanding course**
- Highly condensed lectures that you need to supplement by a lot of reading
- **Goal of lectures:** tell you about some important topics in foundational research on data management
- **Goal of your work:** make sure you can follow and understand
- Read papers and present a summary (essays), and for one paper you should show that you **really** understand all the details (final project + presentation)

Essays and Final Project

- **Guidelines for essays:**
  - Between 5 to 7 pages (including references)
  - Should present a summary of a paper understandable to someone who has not read the paper
  - Definitions and statements must be formal and complete
  - Proper citations are expected
  - No copy-and-paste – it is your essay. It is crucial that you present your own thoughts and/or analysis

- **Guidelines for final projects:**
  - Between 7 to 9 pages (including references)
  - Similar to essays, but in more depth – don't forget, you should show that you understand all the details in the paper
  - **In addition, a piece of your own work is expected:**
    - Extend some of the results
    - Close an open problem
    - Implement an algorithm and analyze its performance
    - Isolate special cases that improve existing solutions
    - Etc. (the list is not exhaustive)

Main Topics

1. Foundations of relational query languages
2. Approximation of conjunctive queries
3. Semantic optimization of conjunctive queries

Essay 1

4. Foundations of XML
5. Graph databases: Data model + query languages

Essay 2

6. Ontology-based data access (OBDA)
7. Query rewriting in OBDA
8. Consistent query answering in OBDA

Essay 3

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1. Foundations of relational query languages
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7. Query rewriting in OBDA
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Final Project

(but, on a different paper)