



Chapter 0

Introduction

Advanced Algorithms

SS 2019

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Lecture Overview

Objectives

- A collection of important (and interesting) techniques and results from the area of algorithm design and analysis
- Provide a (very biased) overview of current topics

List of Possible Topics

- Approximation algorithms
- Randomized algorithms
- Graph / metric embeddings
- Graph sparsification
- Theory of learning
- Sketching and streaming algorithms
- Continuous methods in combinatorial optimization

Lecture and Exercises (106-00-007)

- Friday 10:15 – 12:00 (lecture), 12:15 – 14:00 (exercises)

Format of the lecture

- Advanced lecture → relatively fast paced
 - Slow me down by asking questions!
- Might mix lectures and exercises a little bit
- We will discuss some exercises together and will give you some more that you can try to solve by yourself
- Doing the exercises is not mandatory, it is however highly recommended
- Material covered in the exercises is also part of the oral exam!

<http://ac.informatik.uni-freiburg.de>

→ Teaching → SS 2019 → Advanced Algorithms

- We will publish all important information there!
 - Slides, lecture notes, exercises, recordings, links to further literature, ...
- Check the web page regularly!
- Recordings and/or lecture notes will be put online
 - Sometimes with some delay...