

Summary: Lecture 12

Summary for the chapter 13.1 up to page 307. [1, 2]

Title
Content

Approximation

- to solve function problems
- optimization problems: find less than perfect answers
- ϵ for how many percent are *perfect*
- PTAS: how much do you care about the result? algorithm will adapt time to this

$$\frac{c(M(x)) - \text{OPT}(x)}{c(M(x))} \leq \epsilon$$

Decision problem: Node Cover

Given: Graph $G = (V, E)$ and $k \in \mathbb{N}$

Is there a subset $V' \subseteq V$ with $|V'| \leq k$ such that every edge $e \in E$ contains a node from the subset V' ?

Optimization problem: Node Cover

Given: Graph $G = (V, E)$ and $k \in \mathbb{N}$

Something else :D

TODO

Questions:

References

- [1] Martin Berglund. *Lecture notes in Computational Complexity*.
- [2] Christos H. Papadimitriou. *Computational Complexity*. Addison-Wesley Publishing Company, 1994.