Università degli Studi di Padova

School of Engineering Department of Information Engineering

Master Degree in Computer Engineering

Example of a Title

Supervisor:
Prof. Salvagnin Domenico
Università di Padova:

Candidate:
Zanella Matteo
2122187

Academic Year 2024/2025

Abstract

This is an example of an abstract.

Contents

Chapter 1

Introduction

This is an example of a chapter. . .

1.1 Section 1.1

1.1.1 Subesction 1.1.1

Write something here...

1.2 Math equations examples

$$\begin{cases} \min \sum_{e \in E} c_e x_e & (1.1) \\ \sum_{e \in \delta(h)} x_e = 2 \quad \forall\, h \in V & (1.2) \\ \sum_{e \in \delta(S)} x_e \leq |S| - 1 \quad \forall\, S \subset V : v_1 \in S & (1.3) \\ 0 \leq x_e \leq 1 \quad \text{integer} \quad \forall\, e \in E & (1.4) \end{cases}$$

Constraints 1.2 impose that every node of the graph must be touched by exactly two edges of the cycle. This group of contraints alone isn't enough to guarantee to find a valid Hamiltonian Cycle: we could find lots of isolated cycles.

1.3 Pseudocode examples

Algorithm 1 Greedy algorithm for the TSP

    Input Starting node $s \in V$, Set of nodes V
    Output List of $n := |V|$ nodes forming an Hamiltonian Cycle, Cost of the cycle
  cycle $\leftarrow [s]$
  cost $\leftarrow 0$
  for $i = 0$ to $n - 2$ **do**
    next $\leftarrow \mathrm{argmin}_v \{c_{cycle[i],v} \mid v \notin \text{cycle}\}$
    cost $\leftarrow$ cost $+ c_{cycle[i],next}$
    cycle$[i + 1] \leftarrow$ next
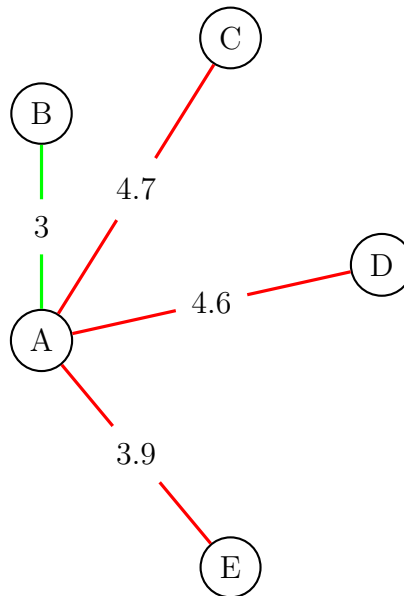 **end for**
  cost $\leftarrow$ cost $+ c_{cycle[n-1],s}$

  return cycle, cost

1.4 Graphs examples

1.4.1 Example of citations

This is a citation to Croes [1]

Bibliography

[1] G. A. Croes. "A Method for Solving Traveling-Salesman Problems". In: *Operations Research* 6 (1958), pp. 791–812. URL: https://api.semanticscholar.org/CorpusID:123646893.