



# Some Title

More elaborate subtitle

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February 29, 2016



# 1 Abstract

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## **2 Introduction**

It is widely known that it can be time-consuming to choose the wrong path, if you want to travel from one city to another. It will most certainly be faster to aboard the train from Copenhagen to Roskilde, rather than going through Kge before heading to Roskilde. Choosing the right path will therefore save a lot of time. For computersystems to choose such a path, they'd need a method for calculating such, an algorithm.

Different shortest-path algorithms are known to solve such problems theoretically faster. We'll therefore examine if these complexity-bounds holds in real life implementations, by implementing them with different data structures in C++, thus finally to match them up against each other.

## **3 Problem definition**

To examine and benchmark the complexity of different shortest-path algorithms, e.g. Dijkstra, Bellmann-Ford, and A\* Search. We will do this by implementing and comparing them using different data structures and libraries. Finally we will compare the results of these experiments with the theoretical bounds.

## **4 Bellmann Ford**

## **5 Dijkstra**

## **6 A\* Search**

## **7 Results**

## **8 Bibliography**