University of Wisconsin-Madison

An Analysis of K-Server algorithm performance

Stefan Caldararu, Marc Renault

Department of Computer Science, University of Wisconsin – Madison

May 4, 2023

Abstract

Write something here...

Keywords: add keywords...

Contents

1 Introduction

1.1 Outline

This paper considers the K-Serversproblem, and the practical development of algorithms within a C++environment. Additionally, we both provide a literature review, and multiple forms of analysis of a variety of algorithms. In sec. 1.2, we provide a problem description for the K-Serversproblem. In section 2 a brief literature overview is provided, and then sec. 2.2 describes different performance metrics that can be used when looking at these algorithms. In section 3, multiple popular K-Serversalgorithms are described, and a brief list of benefits and drawbacks are provided. We then describe the software implementation for the algorithms in sec. 4, and some analysis of numerical experiments in sec. 5. Finally, we provide some analysis of results in sec. 6, and propose future research thrusts in sec. 7.

1.2 Problem Description

Write problem desc.

2 Background

2.1 Literature Overview

2.2 Analysis Methods

Competative Analysis

Direct Analysis

Max/Max Ratio

Bijective Analysis

3 Algorithm Description

Random Algorithm

Greedy Algorithm

Optimal Algorithm

Work-Function Algorithm

Double Coverage Algorithm

K-Centers Algorithm

4 Software implementation details and API

Write about the software implementation, threading, how the algorithms were implemented, etc.

5 Numerical Experiments

What experiments were conducted, and the results from the experiments...

6 Analysis

6.1 Analysis

Describe the results from the data that was collected, what is interesting, different results...

7 Conclusion

Write something here...