Sample Report

Your Name

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Abstract

Brief description of the problem, your solution, and the results.

1 Introduction

Introduce your work.

- Why is it important?
- What's the motivation?
- What's your novelty?

Numbered list also helps summarizing the main contributions.

1. First point.

2. Second point.

2 Related Work

Cite some important works in this section, for example, [1]. Compare them with your project. One can also combine this section with Section 1.

3 Problem Formulation

Mathematical formulation of your problem. For example

$$\min_{u(t)} \quad \int_0^T g(x, u)dt + h(x(T)) \tag{1}$$

$$\text{subject to} \qquad \dot{x} = f(x, u) \tag{2}$$

Equation (1) can be referred by setting up its label.

4 Solution Method

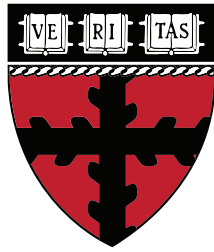Describe your algorithm and its properties.

Theorem 1 (Convergence). *My Algorithm 1 is good.*

5 Experiments

How does your algorithm work and compare with others? What insights have you gained from the experiments? Use figures (see Figure 5 for example) and tables (see Table 1 for example) to better present your results.

Algorithm 1: Calculate $y = x^n$

Require: $n \geq 0 \vee x \neq 0$
Ensure: $y = x^n$
$\quad y \leftarrow 1$
$\quad$**if** $n < 0$ **then**
$\quad\quad X \leftarrow 1/x$
$\quad\quad N \leftarrow -n$
$\quad$**else**
$\quad\quad X \leftarrow x$
$\quad\quad N \leftarrow n$
$\quad$**while** $N \neq 0$ **do**
$\quad\quad$**if** N is even **then**
$\quad\quad\quad X \leftarrow X \times X$
$\quad\quad\quad N \leftarrow N/2$
$\quad\quad$**else** $\{N$ is odd$\}$
$\quad\quad\quad y \leftarrow y \times X$
$\quad\quad\quad N \leftarrow N - 1$

Figure 1: This is the caption for the figure.

	Col1	Col2	Col3
1	6	87837	787
2	7	78	5415
3	545	778	7507

Table 1: This is the caption for the table.

5.1 First case

Use subsections to separate different experiment settings, if needed.

6 Conclusions

Conclusions and potentially future research directions.

Appendix

A   Proof of Theorem 1

Proof. Here is my proof. □

References

[1] Dimitri Bertsekas. *Dynamic programming and optimal control: Volume I*, volume 4. Athena scientific, 2012. 1