

Bayesian Optimization for Shortest Path Prediction

CS4246 Project: Planning and Decision Making in the Real World

Team 04

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Abstract

1. Introduction

2. Gaussian Process Regression Model

2.1 Modelling

2.2 Qualitative Advantages

2.3 Important Requirements

2.4 Interpreting Outputs

3. Technical Approach

3.1 Implementation Details

3.2 Additional Insights

3.3 Improvement

4. Experimental Evaluation

4.1 Real-World Dataset

4.2 Experimental Setup

5. Conclusion

6. Main Roles of Each Member

- **Wei Ling:** Writing of the report, keeping track of requirements, and research.
- **Nathan:** Setting up of the experiment and running the tests using the dataset.
- **Lynnette:** Setting up and experimenting with the various libraries and available tools, and fine-tuning the Gaussian Process models
- **Thien:** Setting up and experimenting with the various libraries and available tools, and fine-tuning the Gaussian Process models
- **Shunhao:** Problem formulation and modelling, mathematics, creating the visualisations and experiment, and writing the report.

7. References