Visual Spatial Reasoning for Large Language Models

Jinlong Liu

A DISSERTATION

Submitted to

The University of Liverpool

in partial fulfilment of the requirements
for the degree of

MASTER OF SCIENCE

Abstract

This is the abstract of my dissertation. It is a brief summary of the spatial reasoning of LLMs, ChatGPT, Bard, etc.

Student Declaration

I confirm that I have read and understood the University's Academic Integrity Policy.

I confirm that I have acted honestly, ethically and professionally in conduct leading to assessment for the programme of study.

I confirm that I have not copied material from another source nor committed plagiarism nor fabricated data when completing the attached piece of work. I confirm that I have not previously presented the work or part thereof for assessment for another University of Liverpool module. I confirm that I have not copied material from another source, nor colluded with any other student in the preparation and production of this work.

I confirm that I have not incorporated into this assignment material that has been submitted by me or any other person in support of a successful application for a degree of this or any other university or degree-awarding body.

SIGNATURE _____

DATE   September 8, 2023

Acknowledgments

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Contents

List of Figures

List of Tables

Chapter 1

Introduction

This project describes the greatest invention since sliced bread, namely twice-sliced bread.

1.1 Scope

1.2 Problem Statement

1.3 Approach

See Fig. **??** for a nice pretty picture that I have included in my dissertation.

1.4 Outcome

Chapter 2

Background

We base some of our results on the previous work of other authors [**?**, **?**].

Chapter 3

Design

In this chapter, we will outline the design of the software that was developed in this project.

3.1   Original design

The original design document that was submitted can be found in Appendix **??**. The idea of that design was as follows....

3.2   Changes to original design

Chapter 4

Implementation

Bibliography

[1] A.N. Author. The best paper of all. *Some really good reference* **12**, pp. 100–113, 2003.

[2] S. omeone. A paper that I wish I'd written. *J. Combinatorics* **34**, pp. 25–78, 1979.

Appendix A

Some Interesting Bit of Code

I might include some particularly interesting part of my code here that is referred to elsewhere in the document.

Appendix B

Experimental results

Here I give details of some experiments that were performed during the course of the project.

B.1   Experiment 1

Some stuff here.

B.2   Experiment 2

Some more stuff here.

Appendix C

Original design document

Here I might insert the original design document for the project, in order to refer to it and changes that I made.