

Theory of Everything Documentation

Introduction

This document provides comprehensive documentation for the Theory of Everything project. It covers the project structure, key components, and usage instructions.

Project Structure

The Theory of Everything project is organized into the following directories:

```
theoryofeverything/ - Main package directory
  ■■■ unified/ - Core unified theory implementation
  ■ ■■■ actions/ - Action principles and formulations
  ■ ■■■ agents/ - Agent implementations for various tasks
  ■ ■■■ core/ - Core functionality and utilities
  ■■■ docs/ - Documentation files
  ■ ■■■ pdf/ - PDF documentation
  ■■■ gfx/ - Graphics and visualization outputs
```

Key Components

Unified Action

The unified action module provides a comprehensive framework for combining different physical theories into a single coherent formulation.

PDF Agent

The PDF agent generates PDF documentation with properly formatted mathematical equations using either LaTeX or ReportLab.

LaTeX Agent

The LaTeX agent generates LaTeX documents for mathematical formulas and equations.

Visualization Tools

The visualization tools provide 3D and 4D visualizations of complex mathematical structures.

Usage Examples

Using the PDF Agent

```
from unified.agents import PDFAgent # Create a PDF agent agent =  
PDFAgent(output_dir="docs/pdf") # Generate a PDF for Maxwell's Equations  
agent.generate_pdf( formula="maxwell", output="maxwell.pdf" )
```

Using the LaTeX Agent

```
from unified.agents import LaTeXAgent # Create a LaTeX agent agent =  
LaTeXAgent(output_dir="gfx/latex") # Generate LaTeX for a formula latex =  
agent.generate_latex( formula="unified_action" ) # Save the LaTeX to a file  
agent.save_latex(latex, "unified_action.tex")
```

Conclusion

This documentation provides an overview of the Theory of Everything project. For more detailed information, please refer to the specific documentation for each component.