Delivery Vehicle Routing System

COS30018 – Intelligent Systems

**Prepared by:**

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# Introduction

In our modern era, the reliance on logistics for package delivery has surged drastically as consumers resort to online shopping, which has seen a significant growth in recent years. With the convenience of e-commerce platforms, consumers now expect swift and efficient delivery of their purchases. The increase in online shopping activity has placed immense pressure on ensuring the logistics operation can be performed in a fast and efficient manner to meet the rising demand for package delivery. As a result, a delivery vehicle routing system is highly required to ensure the packages can be delivered efficiently.

This report presents a detailed overview of a sophisticated vehicle routing system designed by the team to tackle the complex challenges of modern package delivery services. The system developed utilises a combination of multi-agent system framework with a variety of route optimization algorithms. The reports delve into the design and functionality of the system, providing thorough explanation of its operations.

# Overall system architecture

# Implemented interaction protocols

# Implemented search/optimization techniques

## Ant Colony Optimization

## Genetic Algorithm Optimization

# Scenarios/examples to demonstrate how the system works

# Some critical analysis of the implementation

# Summary/Conclusion

# Presentation + demo video link (10 minutes duration)