

## PROJECT DETAILS

Project Title:

**A Data-Driven Approach for Optimising Last-Mile Delivery in Australian Freight Transportation**

Project Summary:

**Aims:** This research aims to develop a unified data-driven framework to optimise last-mile delivery by addressing persistent inefficiencies, environmental concerns, data fragmentation, and stakeholder coordination.

**Significance:** Last-mile delivery inefficiencies account for over 50% of total supply chain costs, yet traditional models fail to adapt to dynamic urban environments. Emerging technologies—such as AI-powered optimisation, and predictive analytics—offer transformative potential in reducing costs, improving route efficiency, and minimising environmental impact.

**Expected outcomes:** The study will provide a scalable, technology-driven framework that enhances logistics efficiency while addressing Australia's unique constraints. Key deliverables include (1) a data integration model to improve real-time decision-making, (2) an AI-based optimisation tool for route planning, and (3) policy recommendations for sustainable last-mile logistics.

**Potential research impact:** The framework can be adopted by logistics firms to reduce operational costs and environmental footprint, while policymakers can leverage insights to support data-driven urban mobility strategies.

Preferred Applicant Skillset:

We are looking for a self-motivated PhD candidate with strong technical expertise in data analytics, mathematical modelling, statistical analysis, and optimisation packages (e.g., Python). Also, a background in operations management, logistics/supply chain management, industrial engineering, or transportation engineering is essential.

Primary Contact:

Reza Kiani Mavi

+61 8 6304 2954

[r.kianimavi@ecu.edu.au](mailto:r.kianimavi@ecu.edu.au)