



A Dynamic and Learning-Based Vehicle Routing Solver

VersaFleet is a transport management Software-as-a-Service (TMS SaaS) that automates logistics operations with route optimisation, electronic Proof-Of-Delivery, instant notifications and real-time job status tracking. VersaFleet powers thousands of drivers worldwide, automating operations one successful delivery at a time for various household FMCG brands.



"It's been a pleasure working with the PIs Prof Roland, Dr Suhendry and team. The academic rigour their team added, while working closely to industry timelines, is commendable. We highly recommend AISG's 100E programme."

*Shamir Rahim
Founder & Group CEO*

BACKGROUND

VersaFleet's existing solvers, as with most deterministic models, do not learn from real-time events or improve its solution outputs over time.

- Its classical algorithms employ meta-heuristic approaches that produce near-optimal solutions nonetheless
- Indeed, these problems are known to be very difficult to solve (np-hard)

However, models of such problems are an approximation of reality.

- Solution outputs are sometimes manually adjusted by operators

- Frequent unpredicted events e.g., drivers taking urgent leave, road accidents, sudden vehicle unavailability, and delivery cancellations cause disturbances and inefficiencies to batch-planned routes

BUSINESS CHALLENGE

How can VersaFleet use AI to tackle issues such as operators' constant manual adjustments, and to better handle dynamic routing?

AI SOLUTION DEPLOYED

New solvers were developed to handle a broader range of different VRP types and which can produce feasible solutions within reasonable compute times. These could also be deployed within a SaaS web architecture and produce results that were well accepted by end-users.

OUTCOMES



The technology deployed introduced an improved service into the market, leading to both product and process improvements



The R&D effort supported subsequent 3rd-party financing, and higher revenues, creating and sustaining new job roles in tech



Total value-added arising from the project exceeded S\$1M