

**“Applied Simulation and Optimization Vol3:
New Innovations In Logistics, Industrial and Aeronautical Practice”**

Simulation is a widely recognised approach that operates across various levels of abstraction, integrating multiple components of a system under study, such as logistics, manufacturing operations. It involves creating a model of the system using formal methods, self software, or programming languages. In industrial settings, simulation is often employed to gain deeper insights into system behaviour. By using these models, researchers can conduct experiments to explore a variety of such as testing new configurations, identifying bottlenecks, and pinpointing inefficiencies that lead to higher operational costs.

However, experiments conducted solely through simulation may not always yield optimal configurations for specific objectives, simulation algorithms, AI allows for effective modelling of complex systems characterised by dynamic and stochastic behaviours. The integration of AI with simulation is particularly important in the context of digital supply chains, smart factories, and other critical components of Industry 4.0.