



Research School for Operations
Management and Logistics

Artificial Intelligence For Sustainable Manufacturing: Predictive Maintenance

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Currently in VDL Nedcar the main maintenance strategy is preventative maintenance or even run to failure. This is unsustainable if VDL Nedcar wants to be the first choice in car manufacturing, which requires just-in-time manufacturing and reliability. Therefore going towards predictive maintenance is an important goal. In this project, we will be looking at predictive maintenance. Doing this there will be made use of a production line that will produce battery packs. The Goals of the PhD can split into three parts. The first part will be investigating in how a model can be created for determining health, i.e. diagnosis and prognosis, of assets. Since the model requires that it works for new lines, it has to work with little data. Secondly, I will investigate how this data can then be used to have an optimal maintenance strategy for the line. In this case, I will investigate the classical replacement problem as known in operations research. Then the third part will be the integration of the solution into a digital twin environment.