UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

LEARNING SHORTEST PATH IN LEGO MINDSTORMS EV3 BY USING LINEAR PROGRAMMING

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ABSTRACT

Shortest path problem is about finding. It can be utilized to find directions between navigation and path selection, physical locations and see the additional path in the sector. In order to make students more understanding about the course and how to apply the knowledge in the real world, this study strives to apply the Linear Programming method in learning shortest path problems by using LEGO Mindstorms EV3 as the tool to collect data and Microsoft Excel Solver to solve the problem by using Network Simplex method in Linear Programming. This study had used two types of sensors to collect the data from reading of LEGO Mindstorms EV3 on the track. The outcomes indicate that the minimum distance of the shortest path can be obtained by using Linear Programming model. Hence, this study is also able to find the minimization cost of the shortest path by using Linear Programming model. In the future study, it is endorsed to use Python as the tool to solve Linear Programming because the value that obtained is more accurate than other tools solver.