

OPTIMIZATION OF FLOOD FILL ALGORITHM USING ITERATIVE LOOK-AHEAD AND DIRECTIONAL TECHNIQUE

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ABSTRACT

In this paper further optimization of Flood fill and Flood-Ahead algorithm is proposed. Our aim is to reach the center of the maze with shortest distance and in fastest time possible. With the present work, a Micromouse traverses a maze of unknown dimensions by travelling the shortest path, without looking the path that exists beyond it, thereby increasing time complexity. Flood Ahead technique iteratively directs the Micro Mouse to the center of the maze by looking at cells (two) that exists beyond it. Time optimization is also achieved by not allowing the Micro mouse to travel those paths beyond which no further route(s) exist. In this paper, by using look-ahead algorithm iteratively with directional algorithm we further reduce the number of steps the Micro mouse has to travel. A performance comparison has been done with normal flood fill algorithm, line follower algorithm, flood-ahead algorithm and look ahead alone. The results show that it can significantly improve the performance which in turn will helps in improving the performance of flood-ahead algorithm.

KEYWORDS: Flood, Fill Algorithm, Iterative Flood, Ahead algorithm, Look-Ahead Algorithm, Directional Algorithm, IR Sensors