Abstract

In this paper we have proposed the implementation of optimized path. We are residing on a geographical area and there is no road. So path planning is a key factor to find out the optimized path to travel to destination. This paper describes a novel approach of autonomous navigation for outdoor vehicles which includes terrain mapping, obstacle detection and avoidance, and goal seeking in cross-country using Swarm Intelligence. This paper combines the strengths of both Particle Swarm optimization (PSO) for finding out the natural paths moreover keeping the obstacle detection from the satellite image, and Biogeography Based Optimization (BBO) algorithm for obstacle avoidance and move towards the shortest path to the goal. In this we have used the classified image. And find out the shortest path in order to find the cross country path planning phenomenon. We have assumed the source and destination in image and various paths which are called the natural paths generated by particle swarm
optimization. The localization of islands positions has been done and through that the final optimized path which is called the shortest path has been find out for the destination. The HSI which is taken in islands is the shortest distance from the destination.

Reference


Index Terms

Computer Science Algorithms

Key words

Path planning satellite image

terrain mapping

obstacle detection and avoidance

Swarm Intelligence