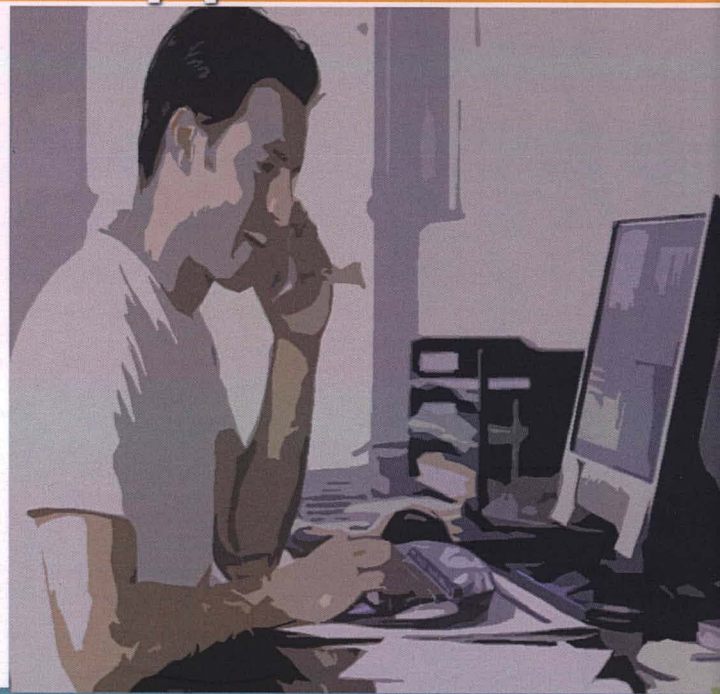


Computer Applications

Theories and Applications

Imad Fakhri Taha Al Shaikhli
Akram M. Zeki
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1. The Use of Genetic Algorithm in Autonomous Robot Navigation

Raini Hassan, Imad Fakhri Taha Al-Shaikhli, Asadullah Shah

ABSTRACT

Mobile robots are used by engineers and scientist as the mediums to collect data such as temperature and pressure, in the environments that may be impractical or hostile for humans to do by themselves. While humans can easily detect objects of obstacles in everyday routes to avoid collisions, mobile robots use autonomous navigation to aid them in similar nature. Path planning is specifically used in autonomous navigation for the purpose of allowing the robots to manoeuvre around these obstacles. Traditional methods other than genetic algorithms can be used in path-planning by using the information gathered by the robot's own sensor. Specifically in this chapter, a description of using genetic algorithms in path planning as well as the basics of autonomous navigation for mobile robot will be explained.