

**Matin Macktoobian:**

I am Matin Macktoobian. I was born in May, 1991, Isfahan. I passed my Basic education in Tehran. After Entry Exam of Iran Universities, in 2009, I opted K. N. Toosi University of Technology, in Computer engineering majoring in hardware design. I commenced my research activities with Prof. Moosavian from mechanical engineering faculty. FDI lab is the recent place to continue my researchs under supervision of Dr. Aliyari.

Research Interest:

- Mobile robotics : Navigation and Path planning
- Autonomous space robotics : Planetary rovers
- Smart systems
- Robust control
- Automatic design of digital integrated circuits
- Java Programming

Thesis Title:

Smart Control of Time-Variant Artificial Potential Fields in Navigation of Space Rovers

Abstract:

Atomic Batteries and Photocell Sheets are which mounted on Planetary rovers, could be taken usual source of energy for space Rovers on planets and asteroids into account. With due attention to magnificence of atomic batteries for nightly missions, it is necessary to utilize the sunlight energy as well as possible during daily missions. It is simplicity itself that if the rover enters the shadow of obstacle, it must use secondary valuable source energy. Therefore, control the entrance rate of robot inside the shadow could be considered as a noteworthy attempt. Control approach is proposed in attached paper. High complexity of multi-variable potential functions occludes the procedure of classical control based on the transfer functions, more and less. So syncretizing the smart control and fuzzy approach with behavioral explanations in the paper might be useful. Most of the sophisticated procedures which are considered for this problem could be determined by logic statements.

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