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## *Design of an Off-Road Autonomous Robot without Wheels Using a Spoked Leg Concept*

Mobile robots have become a critical part of modern day military, search-and-rescue, and security operations. The majority of these robots use wheels to move about the terrain. While wheels work well for smoother terrain, there is a need for versatile off-road robots that can transition from one terrain type to another without any human intervention. A spoked leg concept has been developed and implemented to create an autonomous off-road robot that does not use wheels. The robot can handle snow, ice, mud, gravel, and other off-road type terrain. It is also configured with proximity and magnetic drive sensors which give it a basic artificial intelligence that allows it to move about its environment by detecting objects in its path and making decisions on how to react. The robot is setup as a general purpose platform that can be enhanced for specific applications such as a military spy or a security surveillance agent.



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