

CSE341 (MICROPROCESSORS)

The Alfred¹, an All-Terrain Vehicle

ABSTRACT:

This paper discusses about the A-ATV (Alfred, All-Terrain Vehicle) project which shall be able to traverse through almost any kind of terrain, be it rocky, muddy or just bumpy. In real life situations, it might be challenging or life-threatening for humans to go to certain regions for purposes such as getting information, studying areas or just simply to explore. To solve such problems, we will be making a WiFi Controlled All-Terrain Vehicle which shall possess the ability to overcome the problem of small tunnel holes by going through small spaces, hence ridding humans of the possible dangerous outcomes that could have resulted to the human explorers. Use of WiFi modules over Bluetooth makes it convenient to let the vehicle travel over longer ranges without the person controlling to be around (Lindemann et al., 2016). It will also be able to tackle on smooth, rough and even wet terrains with the help of a damping system made from springs. Alfred (the All-Terrain Vehicle) shall also have a camera and a remote controlled claw gripper as part of its mechanism to show the user where it is going as well as giving the user the liberty to make Alfred carry home a thing or two too. Coherently, it shall also consist of an emergency supply storage which can be used if needed. Instructions to carry out the abovementioned tasks shall be sent via an Online Controller to Alfred the All-Terrain Vehicle (ATV).

REFERENCE:

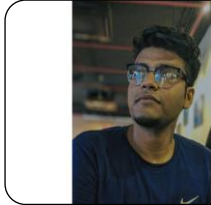
Lindemann, A., Schnor, B., Sohre, J. & Vogel, P. (2016) Indoor Positioning: A Comparison of WiFi and Bluetooth Low Energy for Region Monitoring [PDF File]. *Proceedings of the 9th International Joint Conference on Biomedical Engineering Systems and Technologies (BIOSTEC 2016) – Vol. 5*, 314-321. Retrieved from: www.scitepress.org/Papers/2016/57046/57046.pdf

LIST OF EQUIPMENT:

Arduino UNO, Claw Gripper, High Torque Motor, Camera, Nylon Ties, Springs, Motor Servo, PVC Pipe, Epoxy Glue, Light, Wheels, Motor Brackets, Wires, nuts, screws, WiFi Module (ESP8266)

¹ Named after Alfred: Reference from Batman. Alfred Pennyworth is depicted as the hero's loyal and tireless butler, housekeeper and best-friend throughout the DC Comics series (until Batman R. I. P.)

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