



DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGG.
GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY,
HISAR (HARYANA) - INDIA

Dated: August 10, 2021

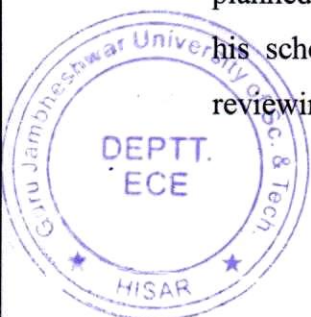
Letter of Recommendation for Arjun Panwar

It gives me immense pleasure to recommend Mr. Arjun Panwar, a school student who carried out a project during July, 2021, under my Supervision at Department of ECE, Guru Jambheshwar University of Science and Technology (GJUS&T) Hisar, Haryana.

During my association with Arjun Panwar, I have witnessed him to be an enthusiast, dedicated, talented and meritorious school student. As a professor, I work with many UG/PG students, who have substantial knowledge of their course subjects. Each year, I notice that only a few make an earnest effort to embrace and carry forward what they have learnt in their theory and Arjun Panwar is, undoubtedly, among those students. I am impressed with his unique combination of intelligence, logic, acute focus and tenacity and that too at school level. His academic potential about the course subjects is reflected in his school grades. He has proven to be a grasping student always ready to acquire knowledge, learn fundamentals and excellent in problem solving.

Arjun successfully completed his project on 'Off-road Surveillance Unmanned Ground Vehicle (UGV)'. As part of this project, he designed a rugged all terrain robot, which can detect objects and reach them on its own. Also, the robot had the capability of real time streaming in day and night time through wireless camera. The objective of this project was to reduce direct human intervention in a hazardous environment, where continuous supervision and surveillance is required. This robot in its current state has a scope for further research into improving its capabilities like use of GPS navigation, addition of audio processing capabilities and improved battery backup. Still, he managed to achieve his goal of development of low cost UGV robot. I bear a testimony to Arjun's marvellous effort in designing the unique features of this robot. He primarily employed microcontroller technology, LM298 motor driver, ESP 32 CAM module to accomplish this task.

Arjun Panwar is extremely hardworking, highly energetic and fabulous in carrying out all tasks meticulously. He has really a good practical knowledge that is exemplary for other students at his level. I have observed him during his project work, where he worked diligently in a very well planned and organized way. During this span of time, I have come across numerous instances of his scholastic brilliance. His project imparted par excellence in matter of choice of topic, reviewing content, designing objectives and final implementation of the project. His research



attributed pertaining an eye for detail, collating relevant information on assigned topic of study were thorough and demonstrated out of the box approach in highlighting issues. Overall, he has an excellent research aptitude as well as an abiding interest to create a hands-on project that can be prototyped and tested for any scientific or commercial application. He exhibited keen interest in the project modules, which involved coding / programming skills. He is also a voracious reader and has abiding interest in a spectrum of readings specially science magazines and journals.

Arjun Panwar's personal strengths are as impressive as his intellectual accomplishments. He is an exceedingly sharp, sincere and industrious student with fabulous drive to attain his objectives. His well-deserved aspirations complementing diligence, clarity of goals and an evidence of outstanding credentials make him an ideal fit for your prestigious institution. I authenticate that he possesses the required intellectual curiosity required for engineering sciences along with the ability of critical thinking for setting up the goals for his higher studies.

I strongly recommend him to be accepted at your prestigious educational institution. Please feel free to contact me for any further queries regarding Arjun Panwar at below mentioned E-mail address. I wish him all the best and success in all his future endeavours.

Dr. Deepak Kedia
10/08/2021

(Dr. Deepak Kedia)

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