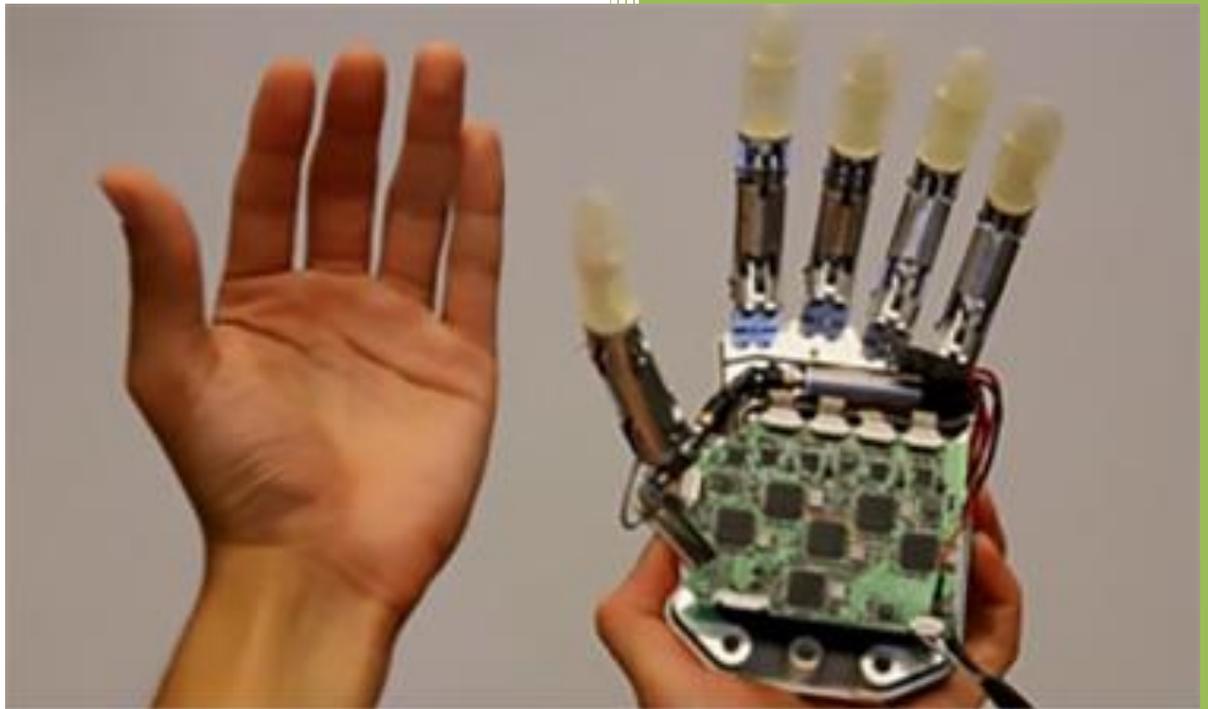


2018

BIO-MEDICAL / MEDICAL ELECTRONICS
PROJECT LIST 2018-2019



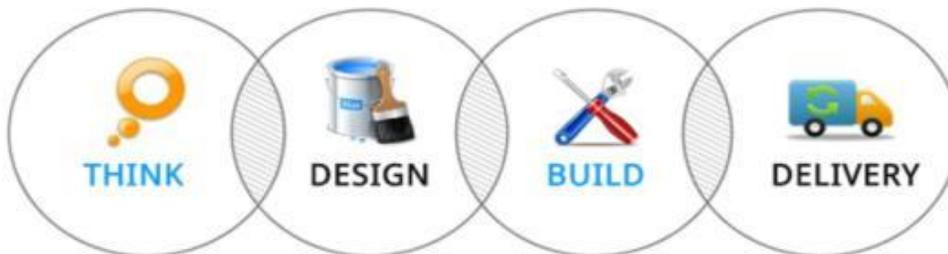
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6/20/2018

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Here we provided a **BIO-MEDICAL / MEDICAL ELECTRONICS 2018 project list** with abstracts. we do train a student from basic level which includes basic Classes, projects implementation, final project demo and final code explanations. If you have questions regarding these projects feel free to contact us. You may also ask for abstract of a project idea that you have or want to work on. The **own projects idea** for diploma and Engineering students can also encouraged here.

Biomedical engineering (BME) is the application of engineering principles and design concepts to medicine and biology for healthcare purposes (e.g. diagnostic or therapeutic).

This field seeks to close the gap between engineering and medicine, combining the design and problem solving skills of engineering with medical and biological sciences to advance health care treatment, including diagnosis, monitoring, and therapy..

IEEE BIO-MEDICAL /MEDICAL ELECTRONICS PROJECT LIST 2018 AND 2019

	2018 - 19 IEEE TRANSCATIONS ON BIO-MEDICAL / MEDICAL ELECTRONICS BASED PROJECT TITLES
TIR001	<p>TITLE - SECURE MEDICAL TAGS FOR REDUCING ERROR AND DRUG INTERACTION WITH EHR SYSTEM.</p> <p>ABSTRACT - With the recent increase in usage of mobile devices especially in developing countries, they can be used for an efficient healthcare management. In this project, we have proposed a novel architecture for improving health care system with the Help of Android based mobile devices with NFC [II] and Bluetooth interfaces, smartcard technology on tamper resistant secure element (SE) for storing credentials and secure data, and a Health Secure service on a hybrid cloud for security and health record management.</p>
TIR002	<p>TITLE - LEG MOTION TRACKING.</p> <p>ABSTRACT - The purpose of this project was to design and build a low cost device to emulater body motion in a virtual environment. Tracking human motion attracts significant attention from several areas such as animation production, ergonomics, sport medicine, and biomedical analysis. First, it was intended to detect human motion by using accelerometers. However, after</p>

	<p>conducting many research and experiments, it was concluded that accelerometers have limitations in detecting motion. In other words, one accelerometer alone cannot detect horizontal movements (on any horizontal ring on a sphere) when there is no dynamic acceleration. One of the proposed and tested solutions was to use compass sensors to compensate for the accelerometers limitations. Therefore, three accelerometers were used to detect the motion of arms, head, neck, and back and the horizontal movement of the back at various angles. The experiment was successfully done and satisfactory results were obtained. The other proposed method which was tested for one body segment and compared to the first solution was to use gyroscopes along with accelerometers. Even though using a gyroscope would improve the results significantly, due to the high cost of gyroscopes and time limitations this method was not implemented. However, using gyroscopes are highly recommended for future design. The 3- D virtual LSM used in this project to validate how well the system tracks..</p>
TIR003	<p>TITLE - SMART BIO-SERVICES: AUTOMATIC ACCIDENT DETECTION AND AMBULANCE RESCUE SYSTEM.</p> <p>ABSTRACT - Road accidents and traffic congestion are the major problems in urban areas. Currently there is no technology for accident detection. Also due to the delay in reaching of the ambulance to the accident location and the traffic congestion in between accident location and hospital increases the chances of the death of victim. There is a need of introducing a system to reduce the loss of life due to accidents and the time taken by the ambulance to reach the hospital. To overcome the drawback of existing system we will implement the new system in which there is an automatic detection of accident through sensors provided in the vehicle. A main server unit houses the database of all hospitals in the city. A GPS and GSM module in the concerned vehicle will send the location of the accident to the main server which will rush an ambulance from a nearest hospital to the accident spot. Along with this there would be control of traffic light signals in the path of the ambulance using RF communication. This will minimize the time of ambulance to reach the hospital. A patient monitoring system in the ambulance will send the vital parameters of the patient to the concerned hospital. This system is fully automated, thus it finds the accident spot and helping to reach the hospital in time</p>
TIW004	<p>TITLE - STREMS: A SMART REAL - TIME SOLUTION TOWARD ENHANCING EMS PREHOSPITAL QUALITY</p>

	<p>ABSTRACT- The paper presents the design and implementation of an IOT-based health monitoring system for emergency medical services which can demonstrate collection, integration, and interoperation of IoT data flexibly which can provide support to emergency medical services like Intensive Care Units(ICU), using a Blynk application which normal people can easily install in their phones and get access. The proposed model enables users to improve health related risks and reduce healthcare costs by collecting, recording, analyzing and sharing large data streams in real time and efficiently. The idea of this project came so to reduce the headache of patient to visit to doctor every time he need to check his blood pressure, heart beat rate, temperature etc. With the help of this proposal the time of both patients and doctors are saved and doctors can also help in emergency scenario as much as possible. The proposed outcome of the project is to give proper and efficient medical services to patients by connecting and collecting data information through health status monitors which would include patient’s heart rate, blood pressure and ECG and sends an emergency alert to patient’s doctor with his current status and full medical information.</p>
TIW005	<p>TITLE - FABRICATION OF EXOSKELETON ARM</p> <p>ABSTRACT- Exoskeleton Arm, a battery powered upper-body robotic arm which instantly increases human strength. Augmenting arm strength by forty pounds, Exoskeleton Arm helps rehabilitate people with back injuries, allowing them to rebuild muscle and relearn motor control. The exoskeleton technology also aids those lifting objects as part of their daily work, particularly in construction or delivery-driven positions. Labor, manual transporting is the main cause of injuries in the Bangladesh work force, and four out of five of these injuries will affect the lower back. Combined, upper body injuries cost the Bangladesh approximately \$5 billion annually. Exoskeleton Arm is obviously an ingenious design, but the team’s use of modern, rapid – and relatively inexpensive – manufacturing techniques makes the project even more compelling. We wanted Exoskeleton Arm to be affordable, as exoskeletons are rarely covered by health insurance. This informed our design decisions and the materials we used. Most structural components are machined from inexpensive aluminum.</p>
TIW006	<p>TITLE - BATTERY MANAGEMENT SYSTEM</p> <p>ABSTRACT- A battery management system is essentially the “brain” of a battery pack; it measures and reports crucial information for the operation of the battery and also protects the battery from damage in a wide range of operating conditions. Battery</p>

	<p>management system (BMS) emerges a decisive system component in battery-powered applications, such as (hybrid) electric vehicles and portable devices. However, due to the inaccurate parameter estimation of aged battery cells and multi-cell batteries, current BMSs cannot control batteries optimally, and therefore affect the usability of products. In this paper, we propose a BMS such that continuously it monitors current, voltage and temperature and these parameters values are sent to the android app through PC.</p>
TIW007	<p>TITLE - DEVELOPMENT OF NOONEE CHAIRLESS CHAIR</p> <p>ABSTRACT- It's an innovative and forward-thinking concept, the ability to sit anywhere and everywhere with the aid of a chair less chair. It's like a chair that isn't there, but magically appears whenever you need it. It's called the chair less chair and you wear it on your legs like exoskeleton, when it's not activated, you can walk normally or even run. Like a chair that is now there. Standing for hours or end causes a lot of distress to lower limbs, but most works get very few breaks and chairs are rarely provided, because they take up too much space. So the best idea was to strap an unobtrusive chair directly to yourself. So it was decided to have this innovative concept in reality, to help workers who work for hours on production line in standing position and tired.</p>
TIW008	<p>TITLE - DEVELOPMENT OF WHEELCHAIR CUM STRETCHER</p> <p>ABSTRACT- The number of patients in India is increasing day by day. So in hospitals patients need to be shifted from wheelchair to stretcher, stretcher to beds, bed to wheelchair, or vice versa; which creates unsafe conditions for patients. Also transferring the patients from wheelchair to stretcher, stretcher to beds, bed to wheelchair is always an issue for the attendant or nurse. Sometime during handling, patient and hospital staff suffer from many problem like stresses are produced in the body, some time chances to sleep down the patient. It is required to eliminate all types of possibilities. Understanding the various issues regarding the mobility equipment, the better design will be an asset for the medical field and a helping hand for disabled individuals. There is a need for a wheelchair cum stretcher to facilitate the disabled patient's mobility and to provide novel medical equipment for use in the Indian hospitals. The present research work proposes a development of wheel chair cum stretcher which will follow the standard specification of both wheel chair and stretcher with considering the issues like safety, hygienic, cleaning and functionality.</p>



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