**Validation of an EMG sensor for Internet of Things and Robotics**

González-Mendoza, A. I. Pérez-SanPablo, R. López-Gutiérrez and I. Quiñones-Urióstegui, "Validation of an EMG sensor for Internet of Things and Robotics," 2018 15th International Conference on Electrical Engineering, Computing Science and Automatic Control (CCE), Mexico City, 2018, pp. 1-5, doi: 10.1109/ICEEE.2018.8533972.

This paper describes the construction of a proposed EMG sensor which is intended as a future work to apply in the field of technology of Internet of Things (IoT) and exoskeletons. Subsequently, this work presents the validation of the proposed sensor compared with commercial clinical use EMG sensors (Biometrics of Biometrics Ltd. UK and Shimmer 3 of Shimmer Sensing, Ireland) based on Signal to Noise Ratio (SNR) that is being calculated by two different methods. The obtained results from the experimentation show that the sensors Biometrics and Shimmer 3 are around 20dB SNR while, the proposed sensor gets between 11dB and 18dB SNR. Then, it indicates that the proposed sensor is feasible for the application in technologies like IoT (for manipulating home devices through the interpretation of muscle activity) or robotics but is not suitable for applications that involve subjects musculoskeletal monitoring or diagnose.

**Significance of Robotics in Manufacturing, Energy, Goods and Transport Sector in Internet of Things (IoT) Paradigm**

R. Patel, S. Azadi, M. H. Babaee, N. Mollaei, K. L. Patel and D. R. Mehta, "Significance of Robotics in Manufacturing, Energy, Goods and Transport Sector in Internet of Things (IoT) Paradigm," 2018 Fourth International Conference on Computing Communication Control and Automation (ICCUBEA), Pune, India, 2018, pp. 1-4, doi: 10.1109/ICCUBEA.2018.8697488.

The advent of robotics itself a revolutionary process or change. It affect in factory automation in such a way that the process to the product path in manufacturing is totally changed. This operation performed by the robots and intelligent systems change the perspective of the industry by the end of 20 th century. The field of robotics challenges among researchers, academicians and in the industry since last two decades. This is due to its vast application in every field includes medical, manufacturing, engineering, goods and transportation, defence, smart cities, etc. Today, robotics/robots are not only bounded by the process automation, but they are integrated part of Internet of Things (IoT) to provide some unsolved solutions. A robot as a service having all key features of IoT like autonomous, mobile, sensing and action taking. The infrastructure facility provided by the IoT facilitate to provider to use as a connected things and establish connections with other things using Internet, either as a end user and/or source of so called information. This paper clearly describes how robotics and IoT work together at different platforms.

**Internet of Robotic Things: Driving Intelligent Robotics of Future - Concept, Architecture, Applications and Technologies**

R. S. Batth, A. Nayyar and A. Nagpal, "Internet of Robotic Things: Driving Intelligent Robotics of Future - Concept, Architecture, Applications and Technologies," 2018 4th International Conference on Computing Sciences (ICCS), Jalandhar, 2018, pp. 151-160, doi: 10.1109/ICCS.2018.00033.

Internet of Things (IoT) provides a strong platform to connect objects to the Internet for facilitating Machine to Machine (M2M) communication and transferring data using standard network protocols like TCP/IP. IoT is gaining rapidly day by day and till date, billions of devices are already connected and in the coming few years, the number can even touch trillions. With consistent advancements, lots of areas like Military, Agriculture, Industry, Healthcare, Robotics, Nanotechnology are adapting IoT for advanced solutions. The research paper proposes a comprehensive view of the new concept of IoT especially proposed for robotics i.e. Internet of Robotic Things (IoRT). IoRT is a mix of diverse technologies like Cloud Computing, Artificial Intelligence (AI), Machine Learning and Internet of Things (IoT). The paper also discusses architecture which plays a significant role in design of Multi-Role Robotic Systems for IoRT. In addition to this, enlists technologies behind IoRT, applications of IoRT and existing robotic systems based on Humanoid, Mobile, Flying and Swarm envisaged for future IoRT systems. The paper provides a strong base for researchers to envision the concept of IoRT and enable them to think out-of-the-box to design and implement IoRT based robotic systems in real-world applications.

**Integration of the Mobile Robot and Internet of Things to Collect Data from the Agricultural Fields**

H. Durmuş and E. O. Güneş, "Integration of the Mobile Robot and Internet of Things to Collect Data from the Agricultural Fields," 2019 8th International Conference on Agro-Geoinformatics (Agro-Geoinformatics), Istanbul, Turkey, 2019, pp. 1-5, doi: 10.1109/Agro-Geoinformatics.2019.8820578.

Robotics and Internet of Things (IoT) are two hot topics in the research area. There are studies in the literature that combine these two topics. In this study, robotics and IoT are used for the agricultural fields. Because, with the technology becoming more available on agriculture; food security, crop yield will be increased and the environmental hazards will be decreased. But this can be achieved by strictly monitoring the agricultural fields and greenhouses. For these purposes, static sensors or sensor networks, and mobile agents are used. IoT forms the backbone of such systems because there are too many units in different places and a lot of data is coming out from these units. Also, processing this data reveals the big data problem. Purpose of this work is integrating the mobile robot platform to gather data from the agricultural fields or greenhouses and then post this gathered data to the web application. So that, data can be stored, processed, and classified on the web application or cloud. This study proposes a design scheme for the mobile internet of things concept where the client or the agent is the mobile robot whether it is autonomous or not. Furthermore, the design structure is not limited to the mobile ground vehicle. Any type of unmanned vehicle or static sensor can be integrated into the system. Internet connection is not limited to only Wi-Fi, there is also a cellular connection in the system. With this study, mobile data acquisition and transferring this acquired data to the web application can be done. Also, the infrastructure of the mobile agent-based internet of things system is shown. On the robot side, autonomy can be added to the system.

**A novel method for implementing Artificial Intelligence, Cloud and Internet of Things in Robots**

Aadhityan A, "A novel method for implementing Artificial Intelligence, Cloud and Internet of Things in Robots," 2015 International Conference on Innovations in Information, Embedded and Communication Systems (ICIIECS), Coimbatore, 2015, pp. 1-4, doi: 10.1109/ICIIECS.2015.7193238.

This paper describe about a new methodology to implement Artificial Intelligence, Cloud and Internet of Things in Robots. Now a days, Artificial Intelligence take a main part in the world into robotics. Almost all industries use robots for various works. They were using co-operative robots to make different kind of works. But there was some problem to make robot for multi tasks. So there is a need to create new methodology to made multi tasking robots. It will be done only by artificial intelligence and internet of things. Also connected to cloud can reduce cost. This paper describe the process to make a robot in a simplified manner.