

# Design and Implementation of Human Prosthetic Hand through Voice Recognition

M. Nagaraj<sup>1</sup>, Keerthi D<sup>2</sup>, M H Uma Maheswari<sup>3</sup>, Amrutha Sanjana V<sup>4</sup>, M H Dhakshitha<sup>5</sup>

Assistant Professor, Department of CSE<sup>1</sup>

Students, Department of Computer Science and Engineering<sup>2,3,4,5</sup>

Rao Bahadur Y Mahabaleswarappa Engineering College, Bellary, Karnataka, India

**Abstract:** Prosthesis is an artificial approach which is used to replace a disabled body part. Prosthesis is typically used to replace and provides implement disabled/defective body parts. Disabled body parts can be of any reason like lost accidentally, birth physical disability etc. In addition to the standard artificial hand for every-day use, many disable have special hand devices to aid in the participation of sports and recreational activities. The main requirement's function should be as natural as real arm. There are various designs of artificial arm that are available in the market categorized as electrical, mechanical, and Myo-electric arm. Mechanical prosthesis uses some motion of the body to provide the power necessary to control the prosthetic component. Electrical arms activate the hand by a motor which is driven by microswitches and relays. With an aging population and war veterans, the disabilities of a human being are increasing day by day. In prosthesis is finding their way into the lives of many individuals. The aim of the paper is to find cheaper solution for robotic prosthetic hand than the product found in market. Human innovations for any problems or disability should serve both poor and rich person of the world. Lack of money should not restrict the people to use advance technology. In this paper, a detailed design of voice and muscle controlled prosthetic hand is proposed. This paper will mostly on the development and manufacturing of the prototype of the prosthetic hand.

**Keywords:** Voice recognition, Bluetooth module.

## REFERENCES

- [1] Richard, Abdullah Al Roman, Md Farhad Sadman, Umma Habiba Mim, Istiyar Rahman, and Md Saniat Rahman Zishan. "Health monitoring system for elderly and disabled people." In 2019 International Conference on Robotics, Electrical and Signal Processing Techniques (ICREST), pp. 677-681. IEEE, 2019.
- [2] Sovacool, Benjamin K., and Dylan D. Furszyfer Del Rio. "Smart home technologies in Europe: A critical review of concepts, benefits, risks and policies." Renewable and Sustainable Energy Reviews 120 (2020): 109663.
- [3] Lonsdale, D., Zhang, L. and Jiang, R., 2020. 3D Printed BrainControlled Robot-Arm Prosthetic via Embedded Deep Learning from sEMG Sensors. arXiv preprint arXiv:2005.01797.
- [4] Sakib, Nazmus, and Md Kafiu Islam. "Design and Implementation of an EMG Controlled 3D Printed Prosthetic Arm." In 2019 IEEE International Conference on Biomedical Engineering, Computer and Information Technology for Health (BECITHCON), pp. 85-88. IEEE, 2019.
- [5] De Barrie, Daniel, Rebecca Margetts, and Khaled Goher. "SIMPA: Soft-Grasp Infant Myoelectric Prosthetic Arm." IEEE Robotics and Automation Letters 5, no. 2 (2020): 698-703.
- [6] Agarwal, R., Flanagan, D. and Gotman, B. (2018). "Automatic EEG signal monitoring during long term in ICU". Electroencephalography and Clinical Neurophysiology, 10(6), pp.144-158.