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Tesis

**Artificial intelligence applied in Human
Medicine with the implementation of
prostheses**

Edwing Ismael Alvarado Landeo
Erick Brayan Surichaqui Montalvo
Kener Velasquez Colorado

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Artificial Intelligence Applied in Human Medicine with the Implementation of Prostheses

Ismael Alvarado-Landeo
Departament of Mechatronic
Engineering
Universidad Continental
Huancayo, Perú
74174245@continental.edu.pe

Erick Surichaqui-Montalvo
Departament of Mechatronic
Engineering
Universidad Continental
Huancayo, Perú
74479295@continental.edu.pe

Kener Velasquez-Colorado
Departament of Mechatronic
Engineering
Universidad Continental
Huancayo, Perú
76636453@continental.edu.pe

Deyby Huamanchahua
Department of Mechatronic
Engineering
Universidad Continental
Huancayo, Peru
dhuamanchahua@continental.edu.pe

Abstract— *The use of artificial intelligence (AI) in medicine is already a reality. Everywhere there is talk of the advantages that AI can mean for the future in our daily lives, as well as its possible applications. The future of "standard" medical practice could appear here ahead of schedule, where a patient could go to a computer before seeing a doctor. Through advances in AI, it becomes more possible for the days of misdiagnosis and treatment of the symptoms of the disease, rather than its root cause, to be left behind. Think about how many years of blood pressure measurements you have or how much storage you would need to remove so that you can fit a complete 3D image of an organ on your laptop. The idea of artificial intelligence in medicine may make you think of robots roaming the halls of a hospital in the distant future, but AI is already here.*

Keywords— *Artificial intelligence, prosthesis implantation, prosthetic rehabilitation, nanomaterials, modeling.*

I. INTRODUCTION

Artificial intelligence (AI) is a branch of computer science that includes very transversal concepts related to logic and learning [1]. The process of implanting the human prosthesis is simplified and can be performed in a less complex way aesthetically, being possible to restore a member of the body without so much complexity in its assembly and operation. For this article, he has focused on seeing how artificial intelligence takes a big step by establishing this type of implementation and that it makes it more efficient in the process of it. Health professionals must know this technology, its advantages, and its disadvantages because it will be an integral part of their work [2].

It is key to highlight that there are different types of human prosthesis implantations, which in many cases can be excessively expensive due to the necessary inputs to perform the implantation adding the time it takes the specialist to perform this process that tries to respond to our problem.

Concerning AI, his contribution was in the integration of nanomaterials and biomaterials to be able to reconstruct part of the affected skin. As you already know, this has given a very important takeoff in the development of prostheses, although it has not exploited all the resources it could provide and not only to prostheses but to medicine in general. This leads to a review of articles related to health topics, applications of AI, prostheses, and new technologies in implants. For example, maxillofacial prosthetic rehabilitation replaces missing structures to regain function and aesthetics related to facial defects or injuries [3].

However, it is known that the nerve cuff electrodes have remained stable during the four months since implantation. These results suggest that 16-channel neuroprostheses will provide stronger knee extension moments for longer before fatigue during standing and transfers [4]. That is why AI can be used to address many challenges facing the world's healthcare system, from disease detection to building predictive models for treatment, thereby improving quality, and reducing the cost of patient care. For example, in recent decades, medicine, mechatronics, mathematics, and materials science have progressed together in the search for the ideal active prosthesis for the upper limb [5].

II. METHODOLOGY

To indicate the intensity of the articles reviewed on the artificial intelligence applied in medicine, a systematic review of the simple literature was carried out. It inquired about the topics of artificial intelligence in the implementation of prostheses in different databases such as Science Direct, Scopus Preview, and Springer, each in the "article" segment where the search for articles related to Artificial Intelligence and Medicine was carried out.