**FINAL WRITTEN EXAM ENGLISH 4 G27**

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**AI: Present and future of medicine**

Technology advances exponentially, with the new and diverse applications and techniques. This includes “AI” that can now recognize patterns and generate simple diagnoses. In addition, medicine now has new facilitation methods, currently tested with more difficult after the advancement of "deep learning" decision making systems, which, can analyze a large volume of data in nanoseconds, propose solutions to problems, analyze and guide possible paths and make decisions in medical environments.

Artificial intelligence (AI) refers to systems or machines that mimic human intelligence to perform tasks and have the ability to improve from the information they collect. The goal of AI is to provide software that can "Think" about what receives and explain what it produces as a result. The advantage of IA is in the independence that this system has when is working, so it is not necessary to the user to pay attention in the machine.

Additionally, AI can recognize images, perceive relationships and connections, understands concepts and not only processes data, follows algorithms and creates its own experience, giving birth to “Deep Learning”, which is a set of algorithms of machine learning that mimic human reasoning without supervision.

By now, the deep learning systems can analyze the data available in databases of births, mortality, hospitalizations, diseases and data of patients registered in electronic medical records. With all this information it can search and indicate the evolution of diseases, even allowing to anticipate epidemics and propose preventive measures, or analyze the coherence between the diagnostic of a patient, the tests requested and the therapy to be applied.

In addition, there are already multiple experiments to verify the ability of current algorithms in diagnosis and almost all of these give excellent results. In the experiments of the Dermatopathology laboratory of Central States, Ohio. The main objective was to determine the effectiveness of deep learning algorithms, applied to the diagnosis of different dermatopathologies and to measure how accurate these algorithms are, using multiple scenarios and challenges that a real doctor have. In summary, those experiments obtained in their entirety a success rate greater than 98% in all of the tests. Because of this, dermatologists are also realizing the value of artificial intelligence and deep learning and have used algorithms to aid in diagnosis of clinical images.

Even so, it is ridiculous to think that a medical professional will trust an AI more than his own judgment, acquired by his training and experience through his effort and built on his time dedicated to the profession. Of course, the objective is not to replace medical personnel, but to act as a mediator between the doctor's own knowledge, since most of the mistakes made in this field are due to the excessive use of one of this knowledge. With all this, the AI would take the role of intermediary and not of "judge" who makes all the decisions.

In conclusion, I hope they continue to experiment with the potential of AI in the diagnosis, control, and recommendation. Society should be educated that these advances have to be applied and improved. This project require a very extensive testing phase, so when they really start using these algorithms, the general public will not see it as a risk, but like greater security.

**References**

Olsen, TG, Jackson, BH, Feeser, TA, Kent, MN, Moad, JC, Krishnamurthy, S., Lunsford, DD y Soans, RE (2018). Diagnostic Performance of Deep Learning Algorithms Applied to Three Common Diagnoses in Dermatopathology*.* *Revista de informática en patología* 9:32, Obtenido de <https://www.jpathinformatics.org/text.asp?2018/9/1/32/242369>