Thesis Title

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1 Introduction

On October 1950, in his article *Computing Machinery and Intelligence*, Alan Turing questioned: "Can machines think?" [6]. At the time, the question was too meaningless to answer since not only the theory but also the technology available weren't devoleped enough. Noneotherless, Turing still predicted that in the future there would be computers that could effectively display human-like intelligence and discernment under the conditions proposed on the aforementioned article.

The breakthroughs of Artificial Intelligence (AI) are predominant, and its importance in our everyday life is undeniable, but the theory behind it has several early roots. The interest in the area grew immensely with, for example, all the Turing's research and the proposal of the first mathematical Artificial Neuron model in 1943 by Warren McCulloch and Walter Pitts (MP model) [1, 4] which potentiated the research of Artificial Neural Networks (ANN) [9]. Ultimately, the latter lead to Belmont Farley and Westley Clark implementation of the first successful ANN in 1954 [2]. However, only in 1956, during the Dartmouth Summer Research Project on Artificial Intelligence [5], was the term "Artificial Intelligence" firstly proposed by John McCarthy et al. and began what is considered to be the birth of AI [9].

The succeeding two decades following the Dartmouth conference were filled with great successes, with special emphasis in the works published by Rosenblatt in 1958 (adding the ability to learn to the MP model) [4], the ELIZA program developed by Joseph Weizenbaum between 1964 and 1966 (natural language processing tool) [3, 8], the General Problem Solver implemented by Herbert Simon/Cliff Shaw/Allen Newell (program capable of solving problems such as the Towers of Hanoi) [7].

2 Background Section

2.1 The domains of Artificial Intelligence

Artificial Intelligence is an extensive term that can be broadly described as the ability of a computer to simulate or mimic human-like behaviors, such as decision-making, judgement and, most importantly, learning [9].

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