

Intelligent machines are interactives

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Abstract

The term 'Intelligent machines' sounds familiar to most people because of the popular idea that science-fiction has fostered in people's imagination by depicting machines embodied in lively humanoid robots. Indeed, intelligent machines are part of mankind's culture and refer mostly to machines that have come to life and that are able to think and act like humans. Yet, in nowadays highly technological context, this metaphor of a machine equivalent to humans is not true: no machine is able to act exactly like a human yet.

Thus, the objective of this thesis is to frame realistically the idea of intelligent machines by re-examining the general concept of intelligence and defining what it means for a machine to be intelligent in today's technological context. This thesis contends that machines belong to human environments and therefore their intelligence depends on human judgment and not primarily on their abilities. Intelligence in machines can, therefore, be understood as interaction ability according to what humans expect from an intelligent being. Thus, machines-humans interaction, and machines-environment interaction are involved in the definition of an 'intelligent' machine. Before undertaking the task of generating intelligence, it is therefore crucial to understand what is expected from an intelligent machine from a human standpoint.

This thesis aims to correct the concept of intelligent machines conveyed by science fiction. It is important for the reader to understand that this thesis does not suggest a method that will generate intelligence in machines as intelligence is usually understood as awareness, but rather it defines the real goal we want to reach when we want to build 'intelligent' machines.

This thesis initially bases its argument on the stagnation of Artificial Intelligence due to an inaccurate approach of intelligence defined as human-like behaviour.

This study relies on Artificial Intelligence, Design and Neuroscience, in order to bring Artificial Intelligence new insights to improve its approach to building intelligent machines.