

This work explores the evolution of artificial intelligence and our perception of the role of machines. There are two main visions of this area of study. On the hand, there is the more popular idea of building machines that think and act like humans. On the other, there is the idea that machines should amplify ourselves, by taking upon themselves routine tasks and letting us focus on activities that are human-centric. The latter approach is called augmented intelligence.

This dissertation is structured into an introduction, three main parts, and a summary. In the introduction, the research questions are presented, which guide the entire dissertation. The primary goal is to find an answer to whether artificial intelligence can be used effectively to improve our decision-making processes. While this dilemma is not new, as we have been trying to answer at the very least from the times of the first expert systems, this dissertation provides an innovative way of answering this question via intelligence augmentation theories and possibilities opened by contemporary technology.

The first part revolves around the history of artificial intelligence, split into two chapters. The first covers technological evolution, while the second one explores the philosophical side of this technology. Artificial intelligence is unique as a piece of technology that sparked our imagination and became one of the biggest metaphysical projects of the XX and XXI centuries.

The next part of the dissertation offers a comparison between the Society of Mind by M. Minsky and the ideas of R. Ashby, J.C.R. Licklider, and D.C. Engelbart. The first one exemplifies the notion of creating machines that can think for themselves or rather how any mind works, machine mind included. The second one is centered around ideas on how to create symbiotic relations between humans and machines.

The third part focuses on contemporary theories of human-machine interaction. Two such ideas are investigated thoroughly. The first one by T. Malone refers to the idea of superminds. These entities are a concept of how we think as a group or an organization. The other idea is co-authored by P. Daugherty and J. Wilson. Their approach is based on an observation that we did a lot of improvements towards how people work and how machines work, but not so much on how to best mix them. They called it a missing middle and explore this notion.

This part is finished by analyzing the idea of augmented analytics. At its roots, it is the current trend in data analytics that delegates as much of the routine work to machines as possible, while also expanding our human capabilities by exploring the possibilities of using machine learning and natural language generation to automate even more complicated tasks like insights generation.

The summary combines all the theories analyzed in the dissertation and introduces two models of decision-making. The first model was proposed by Y. Wang and G. Ruhe. It analyzes decision-making as a cognitive process from the perspective of cognitive informatics. The other model, proposed by F. Harrison, investigates decisions from a managerial perspective.

Finally, a new decision model is proposed. It extends the main schema of Y. Wang's and G. Ruhe's model to include Harrison's, Malone's, Daugherty's, and Wilson's ideas. As such, this construct offers a new way of looking at decisions, a process well augmented by technological means, which pertains to offering people better memory, more creativity, and increased speed, leading to better decisions overall.

Lastly, the discussion section provides a final analysis of all the ideas analyzed throughout the dissertation, including remarks on their feasibility for practical use. The conclusion includes a reflection on the proposed decision model's uniqueness and practicality.

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