



# Melanie Mitchell: Artificial intelligence—a guide for thinking humans

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As the increasing number of AI-enabled tools leave the lab environment to become a part of our daily lives, from education to health, work to entertainment, the issues around AI's current and future capabilities attract growing scholarly and public attention. Nevertheless, not everyone has the necessary specialist knowledge to sufficiently interpret what AI has to offer to humanity and where its limitations lie. This is especially the case for the many of us in humanities and the social sciences, limiting our analytical toolboxes to a non-technical language and monotonous arguments. In dealing with the societal repercussions of AI, a similar situation is also likely to unfold for a wide group of social actors, including but not limited to politicians, labour activists, pressure groups, business people, and journalists.

Right at this point Mitchell's book "Artificial Intelligence: A Guide for Thinking Humans" offers great help as it explains the technicalities of AI for the non-specialist audience. Mitchell uses real-life examples and adopts layman's language, making her book fun and easy to read. The book is composed of five parts, each divided into several chapters. Each part is dedicated to explaining, in great depth and detail, a certain aspect of AI. Part I provides a comprehensive background to the rest of the book by recounting AI's history and describing how multilayer networks work. Part II delves into the great technical and interesting details of the ways in which machines make sense of visual data, the importance of big data in teaching machines 'how to see', and differences between the ways humans and machines learn and perceive their environments. It also discusses the issues surrounding creation of trustworthy and ethical AI, the main argument being that developing regulations and ethics for AI systems requires cooperation among stakeholders with the priority given to AI's vulnerability to attacks, its lack of reliability, and transparency.

Part III explores, with illustrative examples from the field, how games are used to design AI systems that can learn and reason in a similar way to humans. It also

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explains the challenges and considerations related to transferring humanlike learning and reasoning skills to machines beyond the world of game playing. Part IV deals with the field of natural-language processing with the emphasis placed on the main challenges AI systems face in understanding and using human language. It concludes that humanity has still a long way to go in creating machines that can understand natural language in the way humans do. Part V scrutinises the importance of common sense in interpreting real-world events. It describes some attempts to instil this human skill in computers and claims that machines can reach human-level intelligence only when they are equipped with bodies to interact with the human world. The book finishes with a chapter, where Mitchell answers and speculates on her own questions with an aim to bind her ideas and arguments presented in the preceding chapters.

In conclusion, from beginning to end, Mitchell tells the story and technical aspects of AI with a genuine human touch, enriched by her own experiences as a prominent AI researcher. Mitchell's book is a complete introduction to AI for the lay audience with no or little background in computer sciences. The book, with its engaging and straightforward language and meticulously planned out content, is a lifesaver for a broad range of non-technical readership interested in investigating or dealing with the implications of AI on humans and humanity.

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