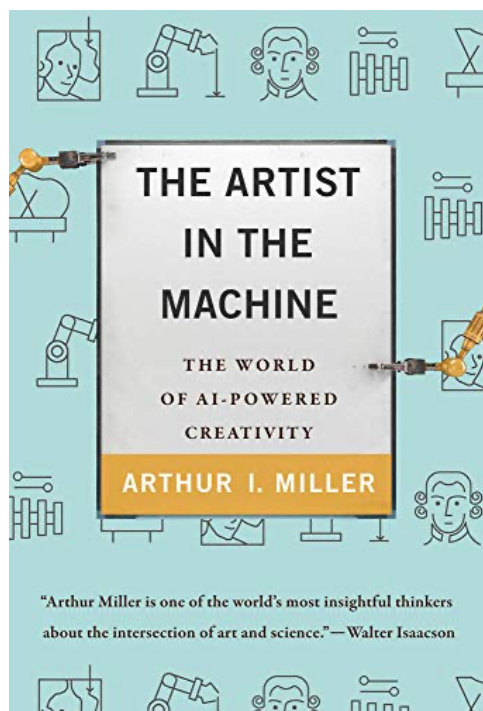


The Artist in the Machine: The World of AI-Powered Creativity

by Arthur I. Miller. The MIT Press, October 2019. 432 p. ill. ISBN 9780262042857 (pbk.), \$29.95.

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Arthur Miller's text provides an accessible introduction to the contributions of artificial intelligence to twenty-first-century art. Using creativity theory, Miller, emeritus professor of History and Philosophy of Science at University College London, confronts the popular belief that computer-generated works are imitative and lack intention. He builds a case in support of this conviction over six sections containing forty-seven chapters. The bulk of the text consists of brief chapters dedicated to a single artist or computer scientist. This brevity allows a great deal of creative work to be covered. The first section of the text starts with possible definitions of the contentious concept of "creativity" and includes seven hallmarks of creativity defined by the author. The second through fifth sections focus on examples of imagery, music, text, and musicals respectively, created with the help of computers. The final section returns to theory and uses it to assert that machines are consciously creative.

Creativity in the text is defined and explained using a diverse variety of sources. Beyond the work of scholars, like Margaret Boden, the author includes quotes on the creativity of machines from the artists and computer scientists he features in the text. While some, like Jake Elwes, view machines as creative, others, like Anna Ridler, dismiss this possibility outright. Throughout, Miller effectively positions machine-generated art as a new medium by comparing it and its reception to that of photography. Similarly, employing computers as a tool to create and enhance music is compared to Jimi Hendrix's use of amplifiers and effects to push the limits of his guitar and human expression.

While the book's content is technical, the reader need not be an expert in computer science.

Miller defines different networks with simple language and examples that show, rather than tell, how these processes work. The author first covers neural networks and generative adversarial networks (GANs) and then subsequently introduces related networks that are defined in reference to these initial base terms. These include recurrent neural networks (RNNs), convolutional neural networks (ConvNets), character-based recurrent neural networks (Char-RNNs), conditional GANs (CGANs), and creative adversarial networks (CANs.) While used sparingly in the text, the images present are effectively placed to help readers better understand neural networks. Thirty-two black-and-white figures are shared as well as four pages of color images. These are supplemented by a website, <https://www.artistinthemachine.net/>, which critically contributes multimedia works that cannot be shared directly within the printed book.

Praise is due Miller for tackling a controversial and technical topic and presenting the content in lay terms. The author has succeeded in capturing a rich picture of recent machine-generated works that includes insights from their creators and points to ways in which the creative potential of both humans and machines continues to move forward.