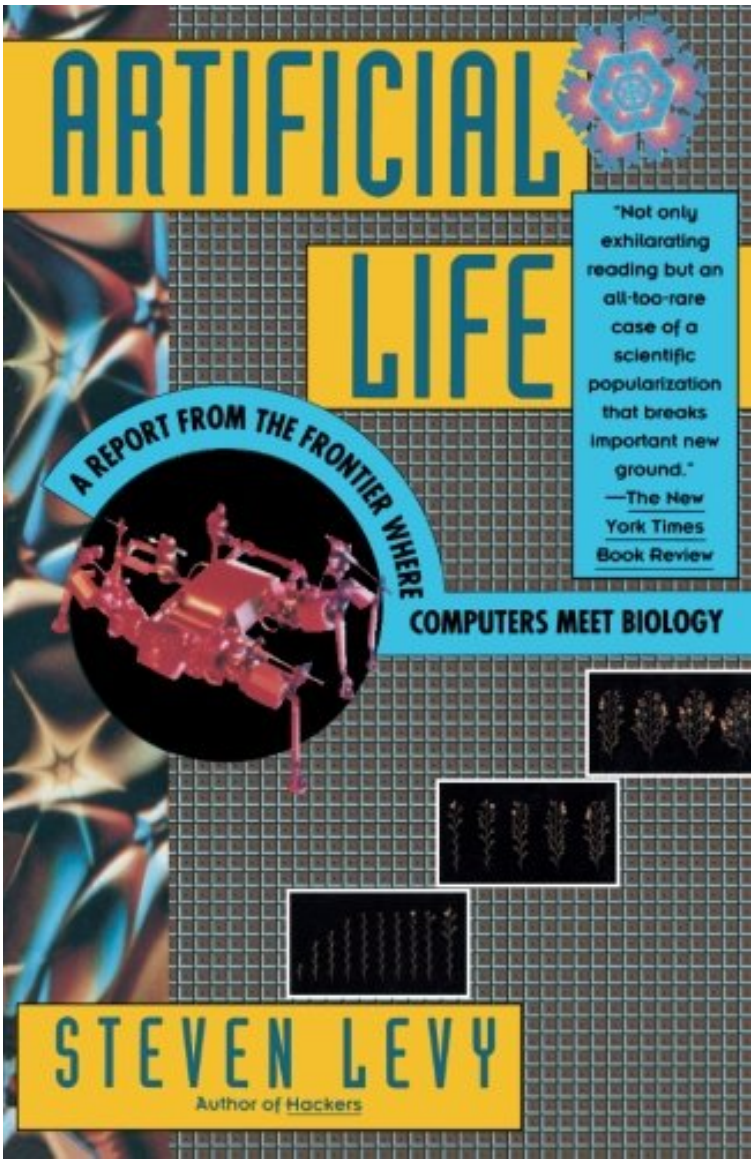
Artificial Life: A Report from the Frontier Where Computers Meet Biology

Steven Levy
*ebooks | Download PDF | *ePub | DOC | audiobook*



#1630013 in Books Steven Levy 1993-07-27 1993-07-27Original language:EnglishPDF # 1 8.50 x .75 x 5.50l, 1.12 #File Name: 0679743898400 pagesArtificial Life A Report from the Frontier Where Computers Meet Biology | File size: 56.Mb

Steven Levy : Artificial Life: A Report from the Frontier Where Computers Meet Biology before purchasing it in order to gage whether or not it would be worth my time, and all praised Artificial Life: A Report from the Frontier Where Computers Meet Biology:

3 of 3 people found the following review helpful. This is a great book.By CantalopianA report from the frontier where computers meet biology. This is a great book. How else would it make it onto Kwato's select reading list?About the genetic algorithm. Remember all the fuss about expert systems and artificial intelligence? Well, this is the way ol' Mother Nature figures out how to get things done. Chilling. Terrifying, Interesting. Colonies of light in magnetic and silicate media live, die, reproduce and struggle for survival.This is the best book of its type I have ever read. It is really, really interesting and Steve Levy puts it all together. Sala'am, Steve Levy (I am making oriental-style bows in my cube right now) Plus is is scary. Not fun scary like Frankenstein, but deep-down scary. The future belongs to RAM creatures.0 of 0 people found the following review helpful. The FutureBy Dalton G. Seymour Jr.If you like science at all, are even remotely interested in articial life and artificial intelligence, this book is a real page turner. I first read it back in the 90's, I have spent the last 6 years studying AI neural nets and this book is still relevant, fascinating, and very well written.2 of 2 people found the following review helpful. Superb!!By LibrumAL is popular science writing of the first order: informative, clear, fascinating, and entertaining. My only disappointment is that it was published in 1992, and thus does not touch on developments in the field since then. I'd love to know how these have panned out, and whether scientists remain enthusiastic about the possibilities of A-Life. Judging from the textbooks on A-life that have been published since 1992, the field is alive, at least, and I can only assume it is well to boot. I'll have to hunt for bibliography elsewhere. My thanks to Levy for sending me on this hunt. AL is a book to fire the imagination. I'd give it 10 stars!A note on the metaphysical material in AL that bears on the question of whether present iterations of 'artificial life' are, or whether future iterations may one day be, sufficiently complex that they should be considered true LIFE: throughout, Levy stresses the essential link between an (')organism(') (wet or dry) and its environment. Yet, it seems to me, in discussing the question of the LIFE-status of in-silico 'organisms', he considers the 'organisms' alone. I wonder whether this apparent preference reflects his own bias, or a bias on the part of the scientists he profiles? From the perspective of emergent behavior and the capacity to evolve, etc., AL 'creatures' self-evidently bear a striking resemblance to biological creatures. It strikes me, however, that a key consideration in the wet-life as LIFE versus dry-'life' as LIFE argument -- is that wet-life organisms express emergent behavior and evolve, etc., in environments that are, throughout, rife with other life, whereas dry-'life' 'organisms' do the same in environments that are otherwise sterile (by the standards that A-Life scientists themselves would apply). Some consideration of how environments contribute to the LIFE-status of particular (')organism(')s, and of any definition of LIFE (wet or dry) itself, seems to be of the essence. Yet another thought to pursue -- though doubtless ethologists, philosophers, and A-Life scientists have beaten me there. Proof positive that AL is a highly thought-provoking book. Read it!

This enthralling book alerts us to nothing less than the existence of new varieties of life. Some of these species can move and eat, see, reproduce, and die. Some behave like birds or ants. One such life form may turn out to be our best weapon in the war against AIDS.What these species have in common is that they exist inside computers, their DNA is digital, and they have come into being not through God's agency but through the efforts of a generation of scientists who seek to create life in silico.But even as it introduces us to these brilliant heretics and unravels the intricacies of their work. Artificial Life examines its subject's dizzying philosophical implications: Is a self-replicating computer program any less alive than a flu virus? Are carbon-and-water-based entities merely part of the continuum of living things? And is it possible that one day "a-life" will look back at human beings and dismiss us as an evolutionary way station -- or, worse still, a dead end?

From Publishers WeeklyWriting primarily for readers with backgrounds in science, Levy focuses on the conceptual edge that artificial-life research defines. Photos. Copyright 1993 Reed Business Information, Inc.From Library JournalThe effort to create artificial life is occurring primarily within computer science, although it brings together physicists, microbiologists, mathematicians, ethologists, and others in addition to computer scientists. The computer's ability to simulate system development is being generalized to study evolution and reproduction. Neural networks, while also used for applications other than artificial life simulation, are the primary form considered. As in his earlier book on computer hackers (Hackers , LJ 11/1/84), Levy paints vivid images of the people involved in this work and puts a lot of effort into explanation of technical details, but this book is not easy reading. (None of the notes or figures were seen.) For larger specialized science collections. Previewed in Prepub Alert, LJ 3/15/92.- Hilary D. Burton, Lawrence Livermore National Lab, Livermore, Cal.Copyright 1992 Reed Business Information, Inc.From Kirkus sLevy again reports from the front lines of technology in this exploration of the history and future of the creation of artificial life--as impressive and illuminating a work as his memorable Hackers (1984). Colonies of light on a computer screen compete, learn, reproduce, and die; ``viruses'' committed to self-preservation adapt to new environments, search computer systems for food, replicate themselves, and destroy; tiny ``bugs'' swarm out of a vacuum cleaner to suck up dirt beneath sofas and carpets, then return to deposit the dirt at home base; a mechanical cockroach sees an object in its path, adjusts its legs to crawl over it, and continues in its explorations. The question of which of these creatures, if any, are alive has stimulated a storm of controversy concerning the definition, underlying structure, and necessary characteristics of life itself--primary concerns in the creation of ``alternative life forms,'' an

endeavor that has also led to insights into the workings of flocks of birds; the mechanisms behind the evolutionary process; the origin of life; and more. As Levy methodically traces the development of ``A-life'' studies from John von Neumann's interest during the 1940's in the similarities between computers and nature to today's soul-searching by researchers into the spirituality, civil rights, and destructive power of future artificial life forms, he also highlights the other lure of such research: the eventual production of robotic servants; cheap planetary pioneers; more efficient, virtually immortal bodies for our human descendants; and even, some scientists believe, a successor species to our own. Ringing with echoes of Faust, Frankenstein, and the history of the atom bomb, the field of A-life research is fertile ground for Levy's articulate, probing journalism. This thought-provoking inquiry may be the most comprehensive yet on the subject. (Eight pages of color illustrations; 20 bw drawings and charts--not seen.)