

Book Reviews

Introduction to Machine Learning, Second Edition by Ethem Alpaydin, MIT Press, 584 pp., \$55.00. ISBN 978-0-262-01243-0
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I reviewed the first edition of this book in *Knowledge Engineering Review* 20(4), and thought it was a very good book on which to base a one semester introduction to machine learning. This edition is even better. The new edition is more than 150 pages longer, and the additional pages reflect a considerably wider scope. Rather than support vector machines being relegated to a section of a chapter on discrimination, there is now a whole chapter on kernel machines, better reflecting the interest in the field. Similarly probabilistic graphical models now have their own chapter. There is a new chapter on Bayesian estimation, and the chapter on experimental technique, which includes very valuable material on assessing the outcome of experiments, is much expanded. Overall, these are important upgrades to the book, and I think it is significantly improved. I am not sure that the new edition is any more likely to get me to teach the one semester introduction to machine learning that the first edition made me want to teach, but if it does, then *Introduction to Machine Learning* will definitely be the textbook.

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Critical Play: Radical Game Design by Mary Flanagan, MIT Press, 353 pp., \$29.95, ISBN 978-0-262-06268-8
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In the last 20 years, video games have become solidly entrenched in popular culture. Part of this is the increased pervasiveness of computer technology in our lives. When I was a teenager, video games were mainly available in the form of an arcade game—large expensive consoles installed in public spaces that offered classic games like Space Invaders and Pacman consumed our pocket money. There were, of course, games for the new breed of microcomputer aimed at the consumer market, the Commodore 64 and the like, but these machines were not widespread, and unless a boy was lucky in his choice of friends, he was unlikely to have access to one. As the number of computers, both general-purpose computers and the kind of specialized computer that we usually call ‘cell phone’ or ‘game console’, has increased, so has the reach of the video game. The other reason for the rise of the video game is that games themselves have become much more sophisticated—compare my old favorite Chucky Egg with the recent *Assassin’s Creed 2*—offering not just passing entertainment, but complete new worlds in which to become immersed (to the extent that the overt goal of the game can become somewhat secondary; Pearce & Artemesia, 2009). This combination of increased access to game-supporting technology and the increased depth of many of the games, in turn, has led to the broadening of the market for such games from teenage boys to the population as a whole.

This widening audience (though given the participatory nature of games ‘audience’ is not really the right word), in turn, has led to the idea that video games do not just have to be about playing, they can have a serious purpose as well¹. Klopfer (2008), for example, describes the use of games in an educational setting—work that is particularly innovative in that the educational objectives are

¹ Indeed ‘serious games’ are one sub-class of these more purposeful games.

very distinct from, yet intimately bound up with, the goals of the games². It is this area of purposeful games that is addressed by *Critical Play*, indeed ‘critical play’ is precisely to engage in purposeful games. In particular, the book is interested in the ways in which artists and political activists can design games either as a means of creative expression or as a way to focus attention on social issues.

However, the book takes a somewhat elliptical route to get to this focus (though one that I found fascinating). In fact the bulk of the book is a historical study of the ways in which games of all sorts have been subverted by artists and activists to suit their purposes. For example, the process of ‘reskinning’—where objects are given a new appearance to change the game that is played with them—is traced back to the Victorian era, where dolls were ‘killed’, dressed in funeral garb and used to act out burials. The reskinning of dolls is considered under the heading ‘Playing House’, and there are similar analyses of the many ways that board games (e.g., GO ECO, which alters the rules of Go to make it cooperative) and language games (such as Yoko Ono’s poem *Sun Piece* ‘Watch the sun until it becomes square’) have subverted the usual ways we experience these kind of games.

Most interesting to me from this survey are the examples from more recent years, especially those that make use of new technology. Some of these have the trappings of a standard computer game. For example, *September 12th: A Toy World* looks like a variation on *Sim City*, with the city having a Middle Eastern flavor, but the only option available to the player is to bomb the city, causing the surviving population to lament and increasingly to become terrorists. *Hush*, provides an even more stripped-down experience—the user, playing as a mother, has to type words that appear on the screen to keep their baby from crying. If the baby cries too much, hostile soldiers appear and kill mother and child. Both of these games are clearly intended to make the player think about global events while twisting the notions we usually have about games—there is no way to win either of them in any conventional sense. Other games described in the latter chapters of *Critical Play* take the notion of redefining a game even further. *You Are Not Here*, for example, guides participants around New York City while feeding them information on places that they would encounter were they to walk through Bagdad, while *Cruel 2 B Kind* has two teams of players hunting each other through an urban environment aiming to ‘kill’ their opponents by using acts of kindness, such as mistaking them for a celebrity or wishing them a happy made-up holiday.

Drawing on all of this rich history, in the final chapter Flanagan identifies a model for developing games that encourage critical play of the kind illustrated in the rest of the book. This adapts the usual design model for games—a cyclic procedure in which a design goal is set, a prototype is developed, and testing of the prototype leads to revision of the design goals—to make ‘[h]uman concerns, identifiable as principles, values, or concepts ... a fundamental part of the process’. Thus the design goals of the game reflect these values, the rules of the game are designed to promote the values, and the testing of the prototype is intended to check that the required values emerge from playing the game.

In summary, *Critical Play* is many things. It is a history of different forms of critical play, it is an argument for the importance of critical play, it provides a methodology for designing games that encourage critical play, and, as the author suggests in the final chapter, all of that history provides a varied set of strategies for engaging in critical play. Any of these aspects on their own would make this a book worth reading. Together they make *Critical Play* a hugely valuable resource.

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References

- Klopfer, E 2008. *Augmented Learning: Research and Design of Mobile Educational Games*. MIT Press.
 Pearce, C and Armesia, 2009. *Communities of Play: Emergent Cultures in Multiplayer Games and Virtual Worlds*. MIT Press.

² In one example, *Live long and prosper*, the aim of the game is to breed long-lived electronic creatures. To do this one has to identify the genes for long life and a way to selectively encourage the expression of those genes, internalizing much of Medelian genetics.