Smart Machines: IBM's Watson And The Era Of Cognitive Computing (Columbia Business School Publishing)
We are crossing a new frontier in the evolution of computing and entering the era of cognitive systems. The victory of IBM’s Watson on the television quiz show Jeopardy! revealed how scientists and engineers at IBM and elsewhere are pushing the boundaries of science and technology to create machines that sense, learn, reason, and interact with people in new ways to provide insight and advice. In Smart Machines, John E. Kelly III, director of IBM Research, and Steve Hamm, a writer at IBM and a former business and technology journalist, introduce the fascinating world of “cognitive systems” to general audiences and provide a window into the future of computing. Cognitive systems promise to penetrate complexity and assist people and organizations in better decision making. They can help doctors evaluate and treat patients, augment the ways we see, anticipate major weather events, and contribute to smarter urban planning. Kelly and Hamm’s comprehensive perspective describes this technology inside and out and explains how it will help us conquer the harnessing and understanding of “big data,” one of the major computing challenges facing businesses and governments in the coming decades. Absorbing and impassioned, their book will inspire governments, academics, and the global tech industry to work together to power this exciting wave in innovation.

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Customer Reviews
Imagine this. The baby is sleeping upstairs. One of those monitors in her room plays her noises down to the kitchen. The parents can hear her thrash and gurgle. But those sounds are in the background. More prominent is a computer voice that announces: "The baby wet her diapers at 1:23. She’s been awake for four minutes." She cries. Is it time to nurse her already? No, the computer says. Her stomach hurts.

I picked up this idea from Smart Machines: IBM’s Watson and the Era of Cognitive Computing. It is co-written by John Kelly, the director of IBM Research and Steve Hamm, my friend and former colleague at BusinessWeek. I wrote a book about 2011 Watson (Final Jeopardy). So you might think I would find this material familiar. But it’s a very useful, concise and engaging guide to the future of computing--which is also the future of knowledge, sensing, decision-making and discovery. I read it in about two hours. It led me from employment opportunities for Watson to frontiers of Big Data and the physics of new computing. It’s hard to summarize the future of cognitive computing, but these two sentences come pretty close: "In the programmable-computing era, people have to adapt to the way computers work. In the cognitive era, computers will adapt to people."

Returning briefly to the baby example, the idea is that apps will eventually be able to crunch enough data to decode their noises and, effectively, put words in their mouths. Of course, not all babies will use the same noises. I imagine that the program will come with a standard template, and that parents will have ways to correct the machine’s early mistakes, helping it to customize its analysis for each baby.

In Smart Machines, authors John Kelly III and Steve Hamm provide the general reader with a well-written, interesting guide to the future of cognitive computing, "smart machines" humans can use to "penetrate complexity and comprehend the world around us so that we can make better decisions." The authors describe how computers work and how many experts imagine computers will have to work in the future to achieve "smartness". They discuss tools that are being developed today, current research that looks auspicious for future developments, and areas for future research that they believe to hold promise. The emphasis is on work done at IBM, but efforts by others are also mentioned. A central theme to the new technology is how to cope with the vast increase in data available, and the main approach discussed is various ways to move processing closer to the data to eliminate the time lost in moving the data to the processor. Kelly and Hamm envision a cognitive system as analogous to Russian nesting dolls and devote separate chapters to each. The layers are: Chapter 2: how humans interact with computers and get them to do what we want, Chapter 3: how we organize and interpret data, Chapter 4: (possibly my favorite chapter) how we enhance computers to have the machine equivalent of ALL of our senses, not just the obvious sight and...
Chapter 5: how we put together the physical components of a computer, the computer architecture, and Chapter 6: how we build the core components to manipulate matter at the molecular and atomic scale, exploit nanotechnology, and invent a new physics of computing in order to increase processing speeds significantly.

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