BOOKSHELF

Harvard, 2018, 336 pages. Cover courtesy of Harvard University Press.

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A PEOPLE'S
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JOY LISI
RANKIN

READY
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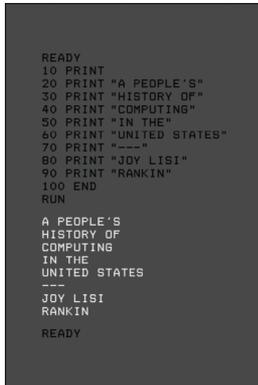
A People's History of Computing in the United States
by Joy Lisi Rankin

This book, whose title is a tribute to Howard Zinn's influential *A People's History of the United States* (1980), seeks to change the dominant narrative about the development of digital America. The prevailing "Silicon Valley mythology," as Rankin calls it, posits that the digital revolution was due to the intrepid genius of a small number of individuals (such as Steve Jobs, Bill Gates, and Mark Zuckerberg). It also celebrates the rise of personal computers and the liberation of the computing experience from the mainframe. Only with the rise of the internet in the 1990s, the Silicon Valley narrative suggests, did the era of widespread and interpersonal computing truly begin.

Rankin argues that computing as a social phenomenon "emerged neither from individual genius nor from the military-industrial establishment." *A People's History of Computing in the United States* focuses on time-sharing systems in the 1960s and 70s. These networked computer systems were composed of terminals connected, often with telephone wires, to a central computer that allocated processing time between simultaneous users. For example, many terminals were located in university computer labs, college dorms, and even K–12 classrooms. Rankin celebrates early "computing citizens" whose access to time-sharing networks led to the first digital communities and multi-user shared experiences. *A People's History of Computing in the United States* pays particular attention to specific time-sharing systems in Minnesota, New England, and the University of Illinois.

A People's History of Computing in the United States is a thought-provoking reinvestigation of the foundations of digital America. It is largely non-technical and written at a level accessible to a wide audience. In her book, Rankin sheds light on a crucial period in which innovation was "not limited to garage hobbyists, entrepreneurs, or military-funded scientists." She inverts the standard narrative and illustrates how public schools and college classrooms were not just end users of advanced technology, but rather innovators and pioneers instead.

MIT, 2019, 216 pages. Cover courtesy of MIT Press.
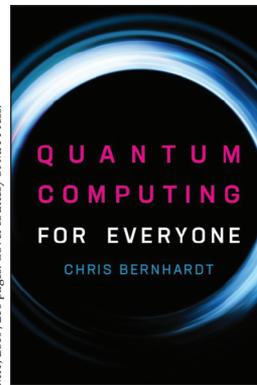
Quantum Computing for Everyone
by Chris Bernhardt

Quantum computing has been a hot topic at the interface of physics, computer science, and mathematics for several decades. However, books on the subject are often too "soft" (relatively math free) or too "hard" (not appropriate for a leisurely read). *Quantum Computing for Everyone*, which is written by a mathematics professor, fits nicely into the niche between popular science account and textbook.

Quantum Computing for Everyone is divided into nine chapters. The first chapter introduces the spin of a particle and the second reviews the necessary linear algebra (all of which is standard undergraduate fare). The next six chapters hit all of the expected topics: qubits, entanglement, Bell's inequality, classical gates and circuits, quantum gates and circuits, and quantum algorithms. A final chapter considers the possible ramifications of quantum computing on the real world.

Quantum Computing for Everyone, although perhaps too advanced for a general audience, is pitched perfectly for the *Notices* audience. The unapologetic use of linear algebra throughout ensures that the book does not hand wave through important details. However, the sharp left alignment of equations takes some getting used to and the frequent typesetting of vectors (involving fractions and the ubiquitous $\sqrt{2}$) in text occasionally make the presentation clumsy.