



Minerva's Machine: Women and Computing

by [Sara M. Carlstead](#)



When I was asked to review [Minerva's Machine: Women and Computing](#), a new ACM video, I was interested and leery. As a woman in computing myself, I have a strong investment in recruiting more women and girls to the field, as well as enlightening both men and women to some of the problems women face in computing. I was leery of this production, however, because I had already seen a rough version of Minerva's Machine almost a year earlier at the [Grace Hopper Celebration of Women in Computing](#). At this

conference, Karen Frenkel, the producer of *Minerva's Machine*, presented a half finished version to a room full of critical professionals and students. As I remember it, Minerva's Machine did not tell "our story" -- the story of women who went into computer science because they knew it was what they wanted to do, or because it was what they had been trained for. Rather, it seemed to tell the story of women who had happened into computing. From my perspective, this was not the best way to send the message to the world that computer science is a great field for women, as well as one in which women encounter many challenges. Karen received so many comments on her video that she passed out a feedback form the next day to hear what changes we thought her video needed to accurately tell "our story."

A year later I sat down to watch the finished version of *Minerva's Machine* and was relieved and surprised by the changes that had occurred.

The first half of *Minerva's Machine* features the stories of past and present women in computing. Ada Lovelace and Grace Hopper, the two most well known women in the history of computing, are profiled first. The clips of Hopper's speeches to students and young people in the Navy help to present her as a funny and vivacious person, and the pictures from her work on the Mark I and with COBOL show us her influence on the early world of computing. The film moves on to introduce us to several of the women in computing today. It does a good job of covering a variety of fields and stages of computer science, from academia to industry, as well as from student to old-timer. Frenkel manages to hit many of the well known women in computing today: Anita Borg, the founder of Sisters, the women in computing email forum; Ellen Spertus, graduate student at MIT and a well known web persona for her collection of information about women in computing and a widely read report on the environment for women in computer science; and Thelma Estrin, one of the computer scientists who helped build Israel's first computer, as well as the mother of another computer scientist profiled in the film.

One part of this film that I had a problem with, was the clip of Janet Wixson and her husband dancing. Although it



achieves what I imagine is its goal, to show that women in computing can have hobbies and be feminine, Wixson's gushing about how she "loved to dance" impaired how seriously I took her. Wixson's profile does show a more emotional side of being a women in computing, including sexual harassment, late night endurance contests with other programmers, raising a family while going to school and working, and finally a position of "Boss Lady," as her screen saver proudly proclaims.

Minerva's Machine manages to profile a good number of notable women of color in computing, something which I was very impressed with since my experiences in computing include even fewer minorities than women.

The second half of the film focuses on the future of women in computing, the young girls and students who aren't going into computing and the decline in the percentage of CS degrees awarded to women since the mid eighties. This part of the film is a must-see for anyone unfamiliar with the reasons young girls aren't going into computing fields. Through the use of telling film clips and interviews we explore issues related to video games, education, and after school programs. One highlight of this section is the segment from the *Barbie* computer game, another is a adolescent girl telling us how much she distrusts and doesn't use her computer.

Frenkel also talks with sociologists, educators, and psychologists who are experts on the issues of technology and gender. The film finishes up with an overview of some of the programs in place to encourage young women to get interested in technology, math, and science.

Overall, *Minerva's Machine* is a good overview of women in computing. I strongly recommend it to students who are interested in the topic, as well as to others who **should** be interested -- namely everyone who wishes to see our field continue to grow and broaden to represent the full computer user population.

Minerva's Machine will be broadcast on PBS stations and is available for purchase from ACM. Contact your local PBS station for broadcast information. Ordering information is available from <http://www.acm.org/minerva/distrib.html>. Student chapters may contact chapters@acm.org for information on borrowing the film from ACM.