Crossroads
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Introduction

by ***John Cavazos***

"Why an issue on computer games?" you may be asking. Several reasons come to mind. First, computer science owes a lot to computer games. Obviously, the computer game industry has made significant advances in computer graphics, but computer games have also made contributions in other areas such as human computer interaction and computer architecture. In the future, I believe the contributions from computer games to computer science, and vice versa, will be even more numerous. Computer game companies and software and hardware companies are forming alliances in order to leverage off each other's research. Entertainment companies and telecommunication companies are also joining these alliances. Whatever the outcome of these partnerships, we know that computer games will change dramatically in the future.

We know that advances in human computer interaction, virtual reality, languages, artificial intelligence, networks, architecture, and, of course, graphics will add to the realism and enjoyment of games. But how much will computer games change in the future? As Nolan Bushnell, founder of Atari, among other companies, points out in the August issue of *CACM*, computer games will look and feel completely different. He describes how someone might be able to completely immerse themselves in a

computer game. The walls and ceiling of their home will be able to display images of the game while a theater-like sound system brings to life the sound effects of the game. With the aid of the Internet, people from all over the world are already able to participate together in games (see, e.g., the *XPilot* article in this issue), and this trend will continue. Computer games will have sociological impacts as well. We will be able to meet vast numbers of people efficiently. It is not to hard to imagine tournaments of computer games with thousands of players from all over the world competing against each other (e.g., *XPilot* already allows dozens of people to participate in remote dog fights).

Some raise valid questions such as, "Will there be any negative side effects of playing these kinds of games?" and "Can computer games serve a useful purpose, other than providing relaxation and enjoyment?". Obviously, computer games can detract from meaningful face-to-face interactions with people and I believe there is little doubt in anybody's mind that computer games can be unhealthy when taken to excess. The answer, of course, is moderation. One positive aspect of computer games that I believe needs more exploration is their potential role as useful tools in education. Computer games are interesting, fun, and are able to keep one's attention for long periods of time. By incorporating aspects of gaming into educational software (which has been done to some degree), people will enjoy their experiences with a computer while learning a thing or two.

This issue has a fascinating cross-section of articles. When I found out Crossroads was doing an issue on computer games, I contacted the author of a computer game which I had enjoyed playing at school as an undergraduate and at work (after work hours, of course), about writing an article. The game is *XPilot*, and it is an enjoyable and addictive game. It is similar to Asteroids, a popular game from the eighties, but unlike Asteroids, XPilot allows multi-user play over a network, whether it be the local area network at your school or the Internet.

Our second article describes the National Coin-Op and Video Game Museum in downtown St. Louis. This museum is full of historical video games, including the first two video games, *Computer Space* and *Pong*, both invented by Nolan Bushnell. Be sure to check out the WWW link in this article to find a Java version of Pong.

To round off the expositions about computer games in this issue, we have an article which discusses how the computer gaming industry is extremely biased towards producing only games for boys. In my opinion, this is a problem which the computer

gaming industry seriously needs to address.

As always, we have articles which do not follow the main theme of the issue. Lorrie Cranor, our beloved ex-Editor-in-Chief, has written an article on creating research posters. I highly encourage you to read this article and note the tips and tactics which are useful and applicable to other areas, such as writing research papers and giving oral presentations. It should go without saying that all students, undergraduates and graduates alike, should participate in a poster session at a conference at least once in their academic career.

We also have an interesting article on strategies for programming contests. This article is written by a team that reached the ACM Programming Contest Finals two years in a row, in 1994 and 1995, and is therefore a must read for anyone thinking of participating in a programming contest.

Finally, we have informative columns on C++, career advice, and ACM student chapter gossip.

This is an issue in which we remind our readers that they should, from time to time, break away from the regular routine of study and research to enjoy themselves, whether or not computer games are involved. We are always interested in feedback from our readers, so whether you like or dislike this issue, tell us so. If you have any other suggestions, comments, or would just like to drop us a line, feel free to do so at **crossroads@acm.org**. I hope you enjoy the articles, and remember to take a break and play a game or two. You deserve it!