Social, ethical, and legal issues in computer graphics essay sample

Technology, Computer

Computers in some form are in almost everything these days. From Toasters to Televisions, just about all-electronic things have some form of processor in them. This is a very large change from the way it used to be, when a computer that would take up an entire room and weighed tons of pounds has the same amount of power as a scientific calculator. The changes that computers have undergone in the last 40 years have been colossal. So many things have changed from the ENIAC that had very little power, and broke down once every 15 minutes and took another 15 minutes to repair, to our Pentium Pro 200’s, and the powerful Silicon Graphics Workstations, the core of the machine has stayed basically the same. The only thing that has really changed in the processor is the speed that it translates commands from 1’s and 0’s to data that actually means something to a normal computer user. Just in the last few years, computers have undergone major changes. PC users came from using MS-DOS and Windows 3. 1, to Windows 95, a whole new operating system.

Computer speeds have taken a huge increase as well, in 1995 when a normal computer was a 486 computer running at 33 MHz, to 1997 where a blazing fast Pentium (AKA 586) running at 200 MHz plus. The next generation of processors is slated to come out this year as well, being the next CPU from Intel; code named Merced, running at 233 MHz, and up. Another major innovation has been the Internet. This is a massive change to not only the computer world, but to the entire world as well. The Internet has many different facets, ranging from newsgroups, where you can choose almost any topic to discuss with a range of many other people, from university professors, to professionals of the field of your choice, to the average person,

to IRC, where you can chat in real time to other people around the world, to the World Wide Web, which is a mass of information networked from places around the world. Nowadays, no matter where you look, computers are somewhere, doing something. Computers today are very popular among homeowners, businesses and schools.

Microsoft began to suffice to the population by creating user-friendly programs such as the ever-popular Windows. This graphical interface served as a bridge to the computer illiterate and then began the reign of Microsoft over the population. Untouched by wrath of Microsoft would later be a small minority of UNIX users and other DOS like programs. Various programs were made just for Windows, which of course ran in DOS. OS/2 at this point was already made, not well known and not very popular. Ironically, Bill Gates worked closely with IBM in 1983, to help develop OS/2, even conceding to IBM that their OS/2 would one day overtake Microsoft’s own attempt at a graphical interface, Windows. However, Windows advanced in its versions and graphics capabilities as well as DOS. In 1995, Microsoft announces its new creation, which will revolutionize computers everywhere. Windows 95 is introduced as a powerful operating system, with an astounding graphical and user-friendly interface. Although, the proprietary nature of the Apple Macintosh operating system and OS/2 led to small market acceptance, and Windows and DOS become the world leading Personal Computer operating systems.

The message Microsoft is trying to send to consumers is simple: “ Windows 95 is it, if you don’t use it, buy it, if your computer can’t run it, replace it.

Changes in computer hardware and software have taken great leaps and jumps since the first video games and word processors. Video games started out with a game called Pong…monochrome (2 colours, typically amber and black, or green and black), you had 2 controller paddles, and the game resembled a slow version of Air Hockey. The first word processors had their roots in MS-DOS; these were not very sophisticated or much better than a good typewriter at the time. About the only benefits were the editing tools available with the word processors. But, since these first two dinosaurs of software, they have gone through some major changes. Video games are now placed in fully 3-D environments and word processors now have the abilities to change grammar and check your spelling. Hardware has also undergone some fairly major changes.

When computers entered their 4th generation, with the 8088 processor, it was just a base computer, with a massive processor, with little power, running at 3-4 MHz, and there was no sound to speak of, other than blips and bleeps from an internal speaker. Graphics cards were limited to two colours (monochrome), and RAM was limited to 640k and less. By this time, though, computers had already undergone massive changes. The first computers were massive beasts of things that weighed thousands of pounds. The first computer was known as the ENIAC, it was the size of a room, used punched cards as input and didn’t have much more power than a calculator. The reason for it being so large is that it used vacuum tubes to process data. It also broke down very often…to the tune of once every fifteen minutes, and then it would take 15 minutes to locate the problem and fix it. This beast

also used massive amount of power, and people used to joke that the lights would dim in the city of origin whenever the computer was used.

Social, Ethical, and Legal Issues in Computer Graphics

Recognizing the importance of computer science an inquisitive being might ponder the changes it has brought to society: life-style, and ethical issues, and knowledge advancement. Contemplating these subjects in computer graphics can lead to many interesting discussions. Few would quarrel with the statement that computers have brought changes in our lifestyle. Whether or not these are good or bad is however a contentious subject. There are several contributions graphics has made that have changed the way we live. The use of computer-generated effects in movies is one area where graphics has had a significant role. Synthetic actors are forming guilds ; o) Computer art, although it has not replaced the palette and chisel, is becoming a medium that artist are exploring and creating significant new work.

Some are predicting that virtual reality will become the dope of the brave new world. Will be plug in and tune out or turn on using computer generated images and sound in the not to distant future?

Of course, we cannot get by without discussing sex, more specifically pornography that is rampant on the Internet and supported by techniques developed by the computer graphics community.

Computer graphics have also played a fundamental role in improving medicine and diagnosis of illnesses.

Ethical Issues

From the very beginning computer graphics has been used by the military to prepare for or defend against war. Modern weaponry depends on computer-generated images.

Violence in computer games is another issue that has been in the news. Shooting as schools and violent acts by youngsters have cause many to speculate that playing violent video games has been a leading cause of these violent acts.

Advancement of Knowledge

Computers have augmented the rapid accumulation of information and an awareness of the world and universe in which we live. This increased understanding is evident in the physical sciences (physics, biology, chemistry, medicine) and social sciences (economics, anthropology, environmental studies). Computer graphics, and in particular, scientific visualization has been critical in furthering our understanding by providing us with pictures, images, and animations that show how events unfold in scientific simulations.

There is lots of researcher routinely use computer graphics to help verify theories, predict new results, or to make hypotheses. for an example Jim

Blinn got his start (well, maybe he was already going) at JPL with his simulations of planetary fly-bys in the late 70’s.

ENVIRONMENTAL GRAPHICS “ terrestrial” division

§ Environmental Graphics – the signs and other graphic schemes which help people locate and understand the services, destinations and activities available in an area

§ Wayfinding- the science of organising and defining a field of messages to make an area as self-navigable as possible

These skills translated very effectively to the virtual world of the Internet and were combined with web programming expertise to create separate divisions of Environmental Graphics for web site engineering, site maintenance and optimisation projects.

ENVIRONMENTAL GRAPHICS “ cyberspace” division

§ Web Mechanic- web site optimisation, web site maintenance and content updates, web site engineering project management

§ Community voice – an independent e-mail and web publication covering local news and politics for our community.

§ E-Petitions – community activism and grassroots democracy meet the worldwide web. Use e-Petitions to demonstrate mass public support for your cause and to heighten community awareness about issues

ENVIRONMENTAL GRAPHICS is unique expertise in resolving navigation and way finding issues.

Environmental Graphics consultants and project managers with unique expertise in resolving navigation and wayfinding issues are the Signs and other graphic schemes, which help people, locate and understand the services, destinations and activities available in an area.

Environmental Graphics are used in –

§ Civic environments and public spaces such as parks, malls, public buildings, sporting venues, transport systems and interchanges.

§ Institutional environments such as museums and galleries (to aid interpretation of the displays), hospitals, educational campuses, etc.

§ Commercial environments such as shopping malls, corporate offices, retail stores, theatres, cinemas, hotels, convention centres, trade shows and exhibitions.

Environmental Graphics also provide a “ look” or corporate image for the area.

It design is required for the physical expression of Wayfinding – the science of organising and defining a field of messages to make an area as self-navigable as possible. They are unique in using Haptics mapping techniques to resolve wayfinding issues.

Wayfinding is the science of organising and defining a field of messages to make an area as self-navigable as possible. This “ area” can be any building, group of buildings, transport interchange, transport system, sporting, cultural or entertainment venue, an urban community, city, state or region.

§ Every trip is unique, people start from different locations and travel to different locations for different reasons. Traffic modes vary – they might walk, ride bicycles, drive cars or use public transport – and the time and distance scale of each journey is different.

§ But the process of finding your way is always the same – it is a process of knowing where you are, seeing where you want to be and understanding how best to get there using the means available.

Wayfinding schemes provide this knowledge, vision and understanding – and they do this by using Environmental Graphics