

Project 3 Srikar Bollavaram

6/5/2014

WRA 110

Project 3: Disciplinary Literacy

## Computer Engineering and Why You Should Choose it

### **Introduction**

In the modern world, computers are a part of everything we do. Everything from watching T.V., browsing on the internet, watching movies, driving cars, and even refrigerating food is controlled by some sort of software or embedded software. While other mechanical engineers are behind the making of these items, it is the computer scientists and computer engineers who really bring these items to life. This essay will discuss what entails Computer Engineering (CSE) and the compelling reasons for an incoming Freshman to choose this over other majors. First I will explain why I chose CSE as my major. Next, I will talk about what MSU demands of students in this particular field. After that, I will talk about how writing ties into CSE. Finally, I will talk about the many ways in which computer engineers impact today's society and the impact they will have in the future.

### **What is Computer Engineering:**

"Computer engineering is a discipline that integrates several fields of electrical engineering and computer science required to develop computer hardware as well as software"(Trinity College). They are involved in not only the process of programming software but also the design of individual microprocessors, PCs, and circuit design. One of the main

things which computer engineers are known for is embedded programming. Embedded programming involves designing and programming a circuit board with an integrated pre-programmed microchip that does not require a full computer to function. This includes but is not limited to parking meters, digital clocks, or garage door openers. Computer engineers are also involved in robotics research, as this research requires an intense knowledge of electrical systems such as motors and sensors (Trinity College).

### **Why I Chose Computer Engineering**

One reason I signed up for CSE is due to the fact that newer and faster computers are in ever increasing demand. This means a more lucrative job market not only because more engineers with newer ideas will be needed, but also because computers are usually associated with innovation and this is a trait which employers look for. Computer engineers also have to have a background in both electrical engineering and computer science. This diversified skill set acts like a fallback plan. Just in case you don't get a job in a computer engineering field, you can look for one in an electrical engineering or computer science field. Finally, the main reason I signed up for CSE is because there is no telling what will come next. Other fields like material engineering or chemical engineering have physical boundaries like the availability of elements in the Universe. These boundaries don't exist in computer engineering. The only boundaries are your mind and expertise.

### **Computer Engineering as an MSU Major**

At Michigan State, CSE majors usually take more classes than most majors. This is because of the sheer amount of material you need to learn. To start, you have to do well

enough in your classes to gain admission to the highly competitive College of Engineering. Currently, an incoming student must achieve a GPA of 3.0 or greater and have completed 12 credits of MSU courses. These courses must include six credits in mathematics, physical, biological sciences, and engineering. The core courses required for this major are MTH 132 or 133 with Chemistry 141 and PHY 183. These requirements will be easily met as long as a student does not underestimate the amount of dedication needed. Students are also required to take the design course EGR 100 and the programming course CSE 231. It is best for a student to gain admission by the end of their Sophomore year because many 300 and 400 level courses which a student will take during their Junior and Senior year require an admission to the College of Engineering. During a student's Junior and Senior years, they must take many specialized courses and electives. These include electrical engineering courses on top of advanced computer programming courses. Students also are required to take computer hardware courses, one of them being ECE 415 - Computer Aided Manufacturing. On average, these classes take 5 years without any summer classes or prior credits.

### **Writing in Computer Engineering**

As uncanny as it may seem, the course WRA 110 can actually help greatly in the field of computer engineering. "Although the main generalization is that computer engineers don't have to do much writing since they deal with computers, they still have to write articles and other papers about any findings they have made"(Bollavaram). This is very true because in order for computer companies to stay in business, they need money either from their products or

grants. "If research done by a company is not presented well in a paper, it is unlikely that [the company] will be awarded any money" (Bollavaram).

## **Conclusion**

In the early 1980s most people could not even fathom the idea of a personal computer. However by the early 1990s, the computer began to gain traction and the internet started becoming popular. In the "old" days, the typical technologies people would use in their jobs would be basic calculators, fax machines, and typewriters. Nowadays you can do all of these and more while doing your job. Computer engineers have created and continue to create a world of seemingly endless possibilities. The foreseeable future will be filled with advances in electronic technologies and many of these advanced electronics will be designed by computer engineers. Newer and more innovative ideas are always in demand. Unlike many other job fields, new computer engineers will always be needed.

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