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Cumulative Reflection

I always knew I would go to Iowa State, but it wasn't till I was actually applying that I knew what my major was going to be. When I started taking my computer engineering classes, it was obvious to me that I picked correctly. I found that I had a good background understanding of the topics in my freshman classes from personal projects I did in high school, so I figured that later classes would be even more interesting since they would expand upon this knowledge base. After five years at Iowa State, I can confidently say that I would not have enjoyed any other major as much as computer engineering.

Now, just because I left high school doesn't mean I stopped doing my own side projects. I definitely learn best by doing, and when I can take concepts from class and explore them deeper on my own in my own projects, I find that my understanding of those concepts quickly goes from good to great. For example, in EE 230 we learned about op-amps. Now, the class taught me how to solve op amp circuits, but my intuition for how op amps can be used didn't come until I started using them for my own projects and playing around with them that way. Now I use them all the time and because of it I can build more advanced circuits than I ever could before.

During the earlier years of my college career, I was a part of Cardinal Space Mining club (CSM) and I helped with an outreach project for the Science Center of Iowa (SCI). The project was a model rover which young kids could control by inserting tiles with arrows on them into a control panel. Its purpose was to teach the fundamentals of programming. Namely that the machine will do exactly what you tell it to do irrespective of what you meant for it to do, and that the simple atomic instructions when strung together could accomplish a complex goal, say, moving from one side to the other. This project has spanned all five of my college years, and I have learned

so much about all that goes into exhibit design. If I had not kept taking in knowledge and applying it to new revisions of the exhibit design, this project would have been dead years ago. I now know that keeping an attitude of lifelong learning can be the difference between success and failure in long term projects. This project is still not complete yet, but it will be soon.

A time where I had to hone a skill to solve a problem was in CprE 186, the Spring freshman project class. My group was making a remote control blimp and we needed to keep the circuit board as light as possible so we wouldn't need an outrageously sized balloon. We already knew that the motors and battery were going to be the heaviest pieces of the blimp, so we needed to minimize the weight of anything else. Well, I was in charge of designing and building the board, and to keep it light I had to use all surface mount devices. I had never done SMD soldering before, so I had to learn. It took some serious practice, but eventually I felt confident enough to do the real thing, and it ended up working!

If I were to do my undergraduate work over again, I don't think there's a whole lot I would change, but there are a few things. I would try to take more of a leadership role in group projects. Getting experience leading a group of peers is something I could have gotten a lot more practice with during college. I also would work harder to find different ways to tackle a problem rather than going with the first solution offered. I learned many times in various ways during my classes that the best solution is seldom the most obvious.

In conclusion, Iowa State has given me preparation to solve problems in the real world by teaching me about working in a team, how to learn new skills to solve new problems, how to search for a better solution even when it's not an obvious one, and how to maintain an attitude of lifelong learning.