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SE494

Cumulative Reflection

How has ISU helped prepare me to:

* Design systems or processes?

Iowa state university has provided me with several classes based around the design of software. These classes included both single projects and group project that have given me the concepts and tools needed in order to design different systems and processes. Within these classes we have learn about the essentials needed to develop software systems and processes as well as how to obtain accurate information about them.

* Formulate and solve engineering problems

By participating in projects with others as well as attending classes in which engineering problems and their solutions are given to us, we can model future cases by past experience. Iowa state university provides us with several lab environments in which we may attempt different problems while providing insight from others who have been through the same process. By providing these assets it allows me to work through a problem in my own way without being given the entire solution to each problem.

* Impact engineering solutions in a global/societal context?

Engineering as a field seems to be fairly isolated at first glance. When I first came to Iowa state, I was unaware of the impact that engineering solutions have on other fields. Taking classes that involve engineering on a broader scale has changed the way I see engineering as a field. Software engineering is prevalent in areas I hadn’t thought about before. Solutions have an impact on multiple different places within society. An application made for one purpose could change the way another industry works. Free software can become a tool accessed to allow others freedom not traditionally accessible to them.

* Consider ethical implications of your engineering decisions?

As stated, above engineering has roots in more areas than I can count. This means that the ethical implications of and decisions I could possibly make are huge. You must think about everyone from the developer to the end user. The problems you are tackling could affect thousands to millions of people. If you are providing a solution you must make sure that it is not detrimental to the people would will be using this solution far into the future. Studies I have read about include a radiation machine that had a software bug that exposed people to overdoses of radiation may not be thought about until the damage is done.

What things have you done at ISU to prepare you to

* Work in groups?

Group work is extremely important in the software engineering field. You must be ready to work with a team to implement solutions at any given time. Iowa State has put an emphasis on this in several classes that I have taken over the course of my education. These classes have taught me about the good and bad you may encounter when working with others. There will be issues and communication is important to overcome the differences that each individual has.

* Recognize contemporary issues?

During my journey at Iowa State University there has been many changes in our society. I have had the opportunity to reflect as well as discuss various topics within our changing society and get multiple different views from people of different backgrounds. All of these people with different perspectives have helped me grow and able to better recognize issues that may not be central to me or my identity. Just because they do not directly reflect something about me these issues have an effect on our whole world. While we may have different opinions we must all be able to recognize the issues that separate us and work toward a common ground.

* Understand professional and ethical responsibilities?

Each one of the projects I have participated have been rooted in a professional manner. We have solved many problems and held other groupmates to a professional standard in order to assure our work was of a certain quality and we could hold others accountable for their work. Ethically we have to deal with finding solutions online to help us in some scenarios for reference. We sometime to be careful of using work without credit and recognition to the original developer.

In class projects & problem solving tasks, did you draw upon information, research or experiences beyond what was provided in class to successfully complete your work? Please state which resources here and how they helped you to complete work (e.g. library resources, specific professional journals, experts in field, other students).

When tasked with a difficult project and in need of further information I tended to rely on my fellow classmates. If the problem became more than me and my classmates could answer I would seek out the teacher or one of the class assistants for help. Most of the time my classmates could provide a new and fresh perspective on the problem that would either fix it or help me to broaden my thinking so that I could come up with a solution.

How did learning activities outside of the classroom (required 124.5 credits), such as Student Orgs, Career or Study Abroad Fairs, Undergraduate Research Experience (REU), or other university programs help you to understand the importance of Lifelong Learning?

Pursuing activities outside of the classroom helped me to realize that there is so much information in the world that it would be a shame if my learning stopped after graduation. From clubs such as HackISU and attending career fairs it was clear to me that college was the beginning step in my education. I wish to continue learning new skills and knowledge well into my future from hobbies to career experience.

Have you started to undertake any new learning to improve your ability to apply skills or knowledge to new problems and to develop confidence in taking risks? Please explain.

Having landed an internship which has turned into a part time job I have began a new journey into learning. I was placed on a team on the front of research into automation and have begun putting my knowledge to the test. With the tools being fairly new I am only afforded little insight to specific problems that I am faced with and have had to produce solutions to new problems. I have participated in several hackathons locally and out of state. Each day of a hackathon is a new chance to meet others willing to teach you or learn a new skill yourself. While these often result in a “crash course” of technology it opens new doors to learning different types of technology and which problems they apply to.

In the context of the first four questions, if you were to do your undergraduate work again, what things would you change?

If I were to do undergraduate work again I would change a couple of things. First and foremost I would join several clubs immediately and connect with more people in my graduating class. This would open more opportunity for critical thinking that I have experienced. Another change I would make is to take brainstorming for class projects a little more serious. Creating websites like many other groups tends to get demoralizing. Looking back on some projects it feels as if we took the easy route and didn’t learn as much or be exposed to news technology as I had hoped going into classes. Overall I believe I developed a well rounded college experience in which I met people and enjoyed my time without letting it interfere too much with my classwork.