CprE 494 Cumulative Reflection Assignment

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A Reflective Journey: Navigating Your Cumulative Experience at Iowa State University

The purpose of this essay is to reflect on my cumulative learning experience at Iowa State University. To begin, I would like to summarize some accomplishments that I am proud of:

- CGPA of 3.96 at the end of my freshman year ("Highest ENGR 2% Sophomore Spring 2022" award on my transcript)
- Internship with a fortune 100 company right out of my freshman year
    - Another internship with that same company the summer after
    - Part-time Software Engineering job for that same company in my Junior and Senior years – I switched to full time in the summer after my junior year.
- Ran a marathon and a 50 km ultra-marathon in the spring of 2024
- Served Chi Alpha Christian Fellowship as its treasurer then president for a semester and three semesters respectively. Additionally, I was a "Small Group Leader" for a bible study leader for two years.
- Served the Friley Residence Hall community as an RA for 3 years after living there as a resident for one year. I received the "RA of the Year" award for my outstanding service and for "truly making a difference in the lives of many students" in the role for the 2023-2024 school year.
- ISU Innovation Prize 2023 winner

Only one of the 6 main bullet points listed above is directly related to the classroom. I will not learn from a formal classroom for the rest of my life (accept for a couple-year tenure of a master's degree). The only constant in the world is that change will happen. This requires learning. Therefore, I will have to learn outside of the classroom for about all of the rest of my life.

Additionally, all but the first (main) point listed above required learning outside of the classroom. Points 2 through 6 required solving problems that I did not learn directly about in the classroom. I had to adapt and learn on-the-fly to overcome obstacles that prevented me from my goals. Some examples of this are as follows:

Solving a roommate conflict: As a Resident Assistant (RA), I occasionally encountered roommates that were not able to resolve differences between one another. One such example: I got a knock on my door at about 1:00 AM on a weekday night. Roommate A had locked roommate B out of the room and jammed the lock so that roommate B could not open the lock with his key. It turned out that roommate B was up late studying for an exam he had the following morning and roommate A wanted roommate B to shut off the light so that he could go to sleep. When roommate B left the room to use the restroom, roommate A jammed the lock in the door. This was carefully resolved by *seeking first to understand, then to be understood*. Listening to both parties to understand their perspective on the situation, I was able to empathize with both of them, and each one hearing the other's perspective helped convince the roommates to agree that if one of them had schoolwork to do after midnight, that they will work on it outside of the room so that the other is able to go to sleep.

Innovation Prize 2023: There came a time where my team and I had to pitch a business idea to a panel of industry experts. I had never pitched anything other than a baseball before then. I used many resources (online articles, videos, a workshop, and peers who had pitched before) to learn how to pitch a business idea so that I could be an asset to my team as we pitched out business idea. The result: we won the competition.

Optimizing Energy Consumption on a "Dev" Board: In an internship, I was tasked with figuring out how to transmit certain messages within a range of operating conditions from a development (dev) board while using as little energy as possible to do so. While I had learned engineering principles, embedded systems, circuits, and algorithm runtime analysis in the classroom by this point, I had never been tasked with anything like this inside or outside of the classroom. I ended up eading a lot of documentation for the system on a chip (SoC), the Bluetooth Low Energy (BLE) transmitter, and energy consumption on respective systems. I determined variables that would influence power consumption (transmission rate, different "modes", clock speed, etc), values that I thought would lead to a solution, and I iteratively tested the system, adjusting these values as I progressed. I documented everything and returned all the findings to the client. They were pleased!

In summary, I will encounter many problems and scenarios in the future that I have not learned about – and certainly haven't experienced. I must commit to continuous, lifelong learning to stay sharp and to overcome these challenges.