1. CR1
    a. ISU provided my first exposure to designing systems/processes through Computer Science 327. Since then I have been expanding my experience in doing so.
    b. In all of my engineering core and computer science classes, I have encountered and solved several engineering problems. With practice, I have begun to excel in solving engineering problems.
    c. Courses I have taken at Iowa State have given me exposure to engineering solutions that have had a global/societal impact. This has caused me to recognize more engineering solutions that will/had have a global/societal impact.
    d. In several of the computer science and computer engineering courses, I have completed there have been sections that cover ethical studies. In these studies, we consider specific scenarios and determine what we would do in their position and why the outcome of those scenarios occurred.
2. CR2
    a. My first time working in a group on projects involving Software Engineering was at Iowa State. I learned how to effectively communicate and pair program at Iowa State.
    b. Most of the work I have completed at Iowa State has been contemporary. Doing this work has provided insight into recognizing other contemporary issues.
    c. By going to career fairs, participating in company information sessions, and orientation classes from freshman year has prepared me well for understanding professional and ethical responsibilities.
3. I have consulted with experts in the field from previous internships, stackoverflow, and other students.
4. Student Organizations inspired me to learn outside of the classroom by working on personal projects, leading me to learn about technologies that are not taught in the classroom.
5. Yes, I have. I have learned about using web and mobile development frameworks that are not taught in the Software Engineering curriculum. I have also learned about implementing Continuous Integration and Continous Development outside of school. This helped me develop confidence when applying to internships and soon career positions.
6. I would begin self-learning outside of the classroom earlier. Also, I would have tried to communicate with faculty more often to learn more from them outside of the class curriculum.

1. OpenAI
    a. I too would have opted to not release the fully trained version of the text generator. The AI could have been easily exploited for fake news generation which is currently an issue we struggle with today.
    b. I think OpenAI decided not to release the fully trained version of the text generator since they realized the possible negative impact the AI could have on the world.
2. Scenarios
    a. Obvious
        i. Add a bitcoin miner to the project that does not affect functionality, but takes away resources allocated to the project.
        ii. Install bitcoin miners on to all users' machines that we say are "required" for the project to work on their machines. Have the miner running in the background.
    b. Grey
        i. The client has mentioned that we can own the code after the project is completed if we wish. We decide to open source it right away before confirming with the client.
        ii. Continue using client's resources after the project has been completed.
3. The obvious scenarios involve providing the client with harmful software that is intended only for personal gain and not in the best interest of the client. The grey scenarios al involve personal but also include carrying out actions that have not yet been confirmed with the client.

1. Gen ed courses
    a. CHEM 167
        i. Predicting human error and understanding basic chemistry.
    b. ENGL 314
        i. Effectively communicating with audiences of no technical background, some technical background, and adequate technical background. I learned how to generate effective reports and memos.
    c. PHYS 221
        i. Impacted my view on how to carry out experiments accurately, evaluating the results of an experiment, and developing hypotheses.
    d. SP CM 212
        i. Has aided me in preparing for presentations and speeches in and outside of the classroom. Has also helped me in speech anxiety and identifying logical fallacies.
    e. POL S 241
        i. Broadened my understanding of world-wide politics and how some countries' governments operate.

GE1: My current short term goals are to obtain a position as a Software Engineer wherever my girlfriend attends graduate school. In this position it is my goal to make meaningful contributions to projects and to aid my development as a professional. I hope to overcome difficult challenges while doing so that will encourage me to improve my technical background.

My "ideal" career in Software Engineering is to be working on a functional team where the work isn't repetitive and always challenging.

GE2: Physics encouraged me to develop hypotheses before I begin to problem solve, and then evaluate the outcome of solving that problem. ENGL 314 taught me how to effectively communicate my thoughts to a fellow coworker when pair programming, thus, allowing for a more productive workflow.

GE3: POL S 241 opened up a whole new view for me on how technology can impact government agencies and operations. While doing so, at all my internships I would take some time to think about how the contributions I make to a project could impact those who benefit from the products. For example, while I worked at a company that produces software for Iowa insurance companies, I realized that a lot of the contributions I made to those products aided individuals working in insurance to do their jobs more effectively, thus, allowing them to assist other customers. This was during the time of the tornados in central Iowa.

1. Screenshot Twitterbot
    1.1. Screenshot Twitterbot is a simple project that can be used to create Twitter bots for tweeting a random image every hour. This project also contains tools for maintaining a collection of images for tweeting and for automating backups of the list of images that have been tweeted.
    1.2. The project consists of a helpers directory, which contains tools for maintaining the collection of images, and a script for tweeting a random image, updating the list of tweeted images, and uploading the updated list to Pastebin.
    1.3. Skills I gained through this project was maintaining Continuous Integration with TravisCI and Python scripting.
2. MazeLike
    2.1. MazeLike is a roguelike multiplayer game where parties of up to four people can play together to defeat monsters, collect items to aid defeating monsters, and traverse through levels to reach the final level of the maze. Each level was a randomly generated maze that had several monsters and a boss. Once the players had defeated the boss they would be able to grab the key the boss dropped to reach the next level.
    2.2. MazeLike consists of three components. There is a Frontend, Backend, and then common component that has shared attributes on classes that are used in both the Frontend and Backend. The Backend verified player interactions within the game to prevent cheat clients. The Frontend made estimations on the Backend's response to make it seem like there wasn't a delay due to the verification of interactions with the Backend. For rendering visuals on the Frontend we used lightweight 2D library called Pixijs. For the backend we used Node.js with Express for creating endpoints and Sequelize for database transactions
    2.3. Skills I gained through this project was working with a modern rendering library, maintaining database migrations, and backend development with Node.js.
3. IMT Computer Services Systems Dashboard
    3.1. The IMT Computer Services Systems Dashboard is an Ember.js project that I worked on solely for the majority of Summer 2018 and is now maintained by the developers at IMT Computer Services. This dashboard acts as a gateway for customers to pick which system they would like to go to next. It is heavily permission based and only shows systems that the customer has access to.
    3.2. The dashboard is an Ember.js project consisting of controllers, models, routes, services, templates, and components. Models represent data that the dashboard retrieved and updated from APIs. Controllers prepare the models to be used in templates. Templates were used to display information to the user.
    3.3. Skills I gained through this project was test-driven development, frontend development with Ember.js, and backend development with Django.