Computer Science: A Growing Field

Section 1:

Throughout the entirety of the course, I learned about many different topics, ranging from data to analyzing that data and how computer science plays a huge role in how everything works and ties together. This course taught me how computer science still has a large way to go, and how the future is full of things that have not been discovered yet but were things that could be done. I learned about how that data gets put into everyday applications that everyone uses but does not exactly notice. Two topics, however, that interested me very much were Natural Language Processing (NLP) and Artificial Intelligence (AI).

To start off, NLP is one field in which Computer Science has to advance in. NLP is the field that is concerned with how computing and human language interacts (Chang, 2018). Some of the most interesting info I found in this lecture started with the idea that NLP is nowhere near perfect. Applications such as Siri, Google Translate, and other supportive applications on a smartphone are examples of imperfect NLP (Chang, 2018). With this, NLP still must adjust to how the human language is continually evolving, and as a result, will often struggle to differentiate between the intended meaning of people and the actual meaning that it stores in its vast database. Additionally, with the growth of language, many gender sexist terms are still there in the computer database, simply due to the percentage of images and patterns of the certain word that is being referenced (Chang, 2018). As a result, although NLP is currently very helpful, much of it is still very inaccurate and has a long way to go. However, NLP can be of great use in the real world, helping to interpret simple language. Additionally, this can help with voice commands, asking AI for input, and advancing how AI and human interaction can cooperate with a project in the future.

Proceeding on, AI has shown me a side of Computer Science that may or may not be all that bad. AI is the term used for stimulated intelligence in machines (Darwiche, 2018). The test to prove if an AI is capable is a test known as the Turing Test (Darwiche, 2018). This test is basically one that passes the machine if it can fool a human investigator into thinking that the AI is in fact human. So, what is intelligence, and how can it help? Well, it can either destroy the world, as Elon Musk believes, or it can actually serve a purpose in helping people make predictions from a large amount of data. It can help people realize and access to accurately and quickly reference a large amount of data quickly. AI has many difficulties in recreating the intelligence and emotion that a normal human would have, but still has the area for growth.

Due to the relation of NLP and AI, I have found that these areas of computing still have a long way to go in terms of advancements but already have multiple areas where they are already strong in. In terms of the future and how these can still advance, this course has given me insight that these fields are still very new. In fact, many areas in Computer Science are still new, as it is still a quite new field. This field, being so new, is one in which many of the people graduating in it continually contribute to the field and how the field grows. This means that I will be contributing to the field as I learn more, and with the field being dynamic, so will the learning.

Section 2:

I have a dream that one day the world will be covered in technology. Technology is one area of growth which the world that will continually be there, and with this growth, the growth of

computers will continue to follow. This world of technology will be one in which flying cars exist, large, industrial skyscrapers beyond the world's imagination, robots, and helpful robotic arms will be there to assist us with surgeries, development, and automation. We will live in a time where traveling from one place to another can take no more than a simple instant. Unfortunately, I do not know if that dream of mine will come true any time soon. However, I do know that we are going there in the world, and I have hope that with time, we will get to this Utopia and pinnacle of technology. One specific technological advancement I hope to see be much further ten years from now is Artificial Intelligence (AI).

Currently, AI is a field in which many real-world applications already make use of it, however much of it is still very limited. The current applications we have extended as far as Tesla's still imperfect self-driving cars, Siri, Bixby, and even Google's Alexa (Darwiche, 2018). Applications on the phone are able to add, make calls, remember to call people by their preferred names—incorrect pronunciation—and be able to operate much of the device's systems based on a single command phrase (Darwiche, 2018). Additionally, Tesla's self-driving cars are able to avoid a lot of accidents, have braking systems that can see and sense beyond the human current sensory spectrum. However, mistakes still can occur, especially with the case that humans still have a dynamic intelligence that is difficult to replicate. I believe, however, this will change in the year 2028.

To start off, AI has many capabilities that are known, and many of which that are not yet achieved yet. In movies, AI has been seen to be able to provide analyses of people in stressful situations, drive cars, provide aid, develop medicine, build machines, and save people in high-stress situations where human help is impossible. In ten years, I do not expect all of these to happen, but I do expect that robots will be able to be equipped with its own AI matrix in which it would be able to start processing more complex commands. With phones, I would expect applications such as Siri and Bixby to be able to process and understand more human slang, such as when we ask them to "Call me an ambulance" and be able to distinguish between a user asking them to call for emergency cases or if it is one in which the user has a preferred name to be called by. Additionally, I would expect a robotic analysis to be able to be given, with AI aiding people in everyday tasks, such as surgery, driving, and mechanics, but would still act as an aid rather than the operator of such task. AIs would be able to provide real-time imaging and be able to advise doctors on how a certain disease or damage is infecting a certain body part or could help with administering proper dosages of the needed chemical for injections needed by the patient. Being more accurate than humans, robotics could help decrease the number of mistakes made by people, as it already does in driving with current auto braking features. However, in ten years, this could evolve to be that cars could drive themselves properly, reducing the need for people to drive themselves places and allow people to relax and sit back. Additionally, everyday tasks of engineering could be aided with an AI, allowing the AI to automate much of the processes that would endanger the lives of engineers every day. When traveling, we could worry less about ordering in a different language, as our translators would be more accurate and we would be able to get from place to place without all the awkward transition of asking questions from the people that may or may not even understand us. Overall, our lives could be made easier and we could accomplish more in a smaller amount of time.

AI is a continually growing field that continues to advance each day. It may not be JARVIS from Iron Man or even Baymax from Big Hero 6 in the next ten years, but I do see much more advanced and accurate AI interfaces. I see people integrating AI into their lives more and more, with AI maybe even helping with much of the everyday hardships that people have to do. I see people being able to focus more on different fields and chase after more complex problems while the AI supports them in the endeavors and the other tasks that need to be accomplished in the meanwhile. AI could help with space expeditions, military movement, and even simple everyday tasks, and with its help, I believe there is more that can be accomplished. I believe that AI is just the start of the many things that we have yet to discover and could be the key to understanding unanswered questions we have and asking the questions we may not even know yet to ask. Most importantly, however, AI will help us with our understanding of humans, as "Two heads are better than one."

Citations

Chang, K. (2018). Teaching Computers to Understand Human Languages (Natural Language Processing).
Darwiche, A. (2018). Artificial Intelligence (AI).