



Week 10 – Adios Ames



August 2, 2023



Curtis Johnson

I'll do one final blog post to recap the REU summer as a whole but first I wanted to talk about what I've thought about living in Ames and the idea of going to grad school

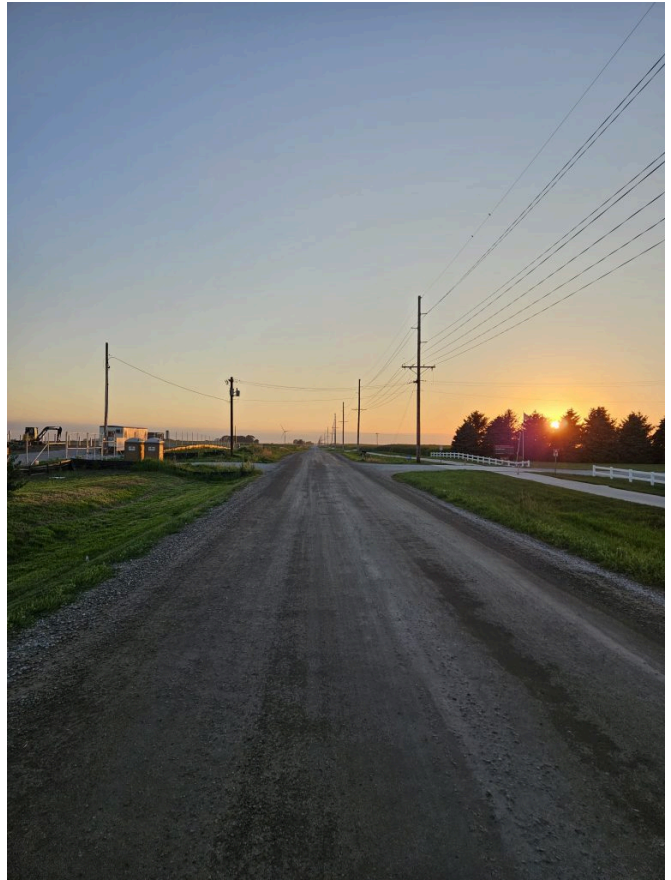
As my time in Ames comes to a close, I find myself reflecting on my experience living in this town and contemplating the idea of going to grad school. With 75 credits completed and only three semesters left in my undergrad, the decision of pursuing a master's degree is fast approaching. The option of getting a Master's in Cyber Defense, which would align perfectly with my remaining athletic eligibility, seems like a sensible path to follow.

However, my time in Ames has also made me think about my future after school. Being away from the farm and experiencing the daily routine of office life and apartment living has made me realize that something is missing this summer. Biking past the horse barn and reminiscing about the work and experiences I left behind back home on the farm made me think about my own horses and all the enjoyment I've got out of them. I've come to realize that I need to be connected to the soil, to the land, and to the Arcadian way of living that has shaped me all my life.

This sentiment was particularly pronounced when I biked through the ISU research farms south of town. Riding through the smell of the sheep, cows, and pigs made me realize that this connection to the land and animals is an integral part of who I am, and something that I will always need to immerse myself in.

I am 20 years old. I value college but recognize it's not the sole focus of my life. My ultimate goal is to achieve the life I envision, even if it means sacrificing getting a master's degree, running track, and the traditional college experience. I'm committed to prioritizing my long-term dreams and living life on my terms

I must live in a certain way





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2 Replies

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Week 9 – Escapades



July 27, 2023



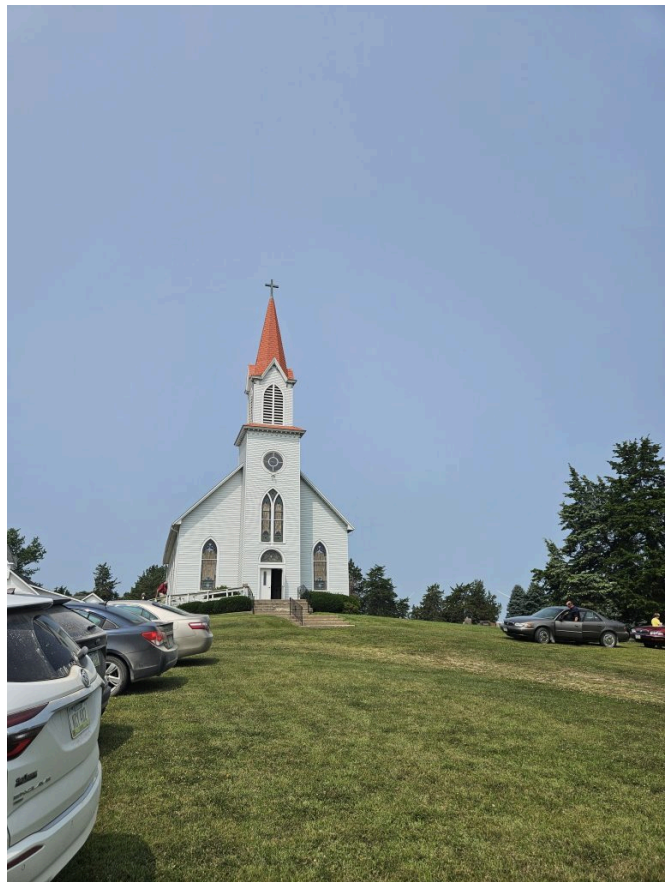
Curtis Johnson

As the summer draws to a close, I've been determined to make the most of the remaining weeks, and RAGBRAI provided the perfect opportunity for some memorable experiences. One such adventure took place in Des Moines on Thursday when Andric and I attended a country concert. It was a special moment for both of us, as it was our very first concert experience. Armed with lawn chairs, we sat back and enjoyed the music.

Amidst the excitement, we have also been dedicated to our research project. Our focus has been on finalizing our poster, putting in the last-minute touches to ensure it conveys

our findings effectively. As part of this effort, I've taken on the task of writing research memos, transforming our research into a concise and readable format that emphasizes our key discoveries. Our poster is shaping up beautifully, and we're eagerly anticipating the opportunity to present it at the upcoming research symposium.

As we approach the end of this remarkable summer program, I can't help but feel grateful for all the valuable experiences, from the thrilling RAGBRAI activities to the growth and learning that came from our research endeavors. The camaraderie with my peers and the knowledge gained throughout these weeks will undoubtedly leave a lasting impact on my life and I'll always remember this summer in Ames.



As the weekend passed, I found myself eagerly looking forward to the remaining two weeks of the program. To kick off the week, the RAGBRAI activities added an exciting touch to the days ahead. On Tuesday, we were lucky to get off work at 3:00, which allowed me to take full advantage of the festivities around town. I hopped on my bike and explored the town, starting at the campground, where I was greeted by a bustling tent city as riders arrived and set up their camps.

Joining the bike route, I had the opportunity to ride through the ISU stadium. Later that night, a friend and I cycled to downtown Ames for the Hairball concert. The concert was an absolute blast, filled with performances of classic rock songs, a rare sight that you don't often come across in Iowa.

The fun continued the next day as I headed to Des Moines for the Lynyrd Skynyrd concert. The organizers had been hyping up the event, stating that up to 50,000 people were expected to attend the concert and the route. While the actual turnout might not have been as massive as anticipated, the experience was still thrilling. The band built up anticipation until the final two songs, Sweet Home Alabama and Free Bird. As Free Bird echoed through the air, the crowd erupted with excitement, and it was the perfect way to conclude the concert on a high note.

Overall, this week was a whirlwind of fun and enjoyment, between the RAGBRAI activities and the incredible concerts. It's been an unforgettable experience, and I can't wait to see what the remaining weeks of the program have in store.





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Week 8 – Research Complete?

[July 20, 2023](#)[Curtis Johnson](#)

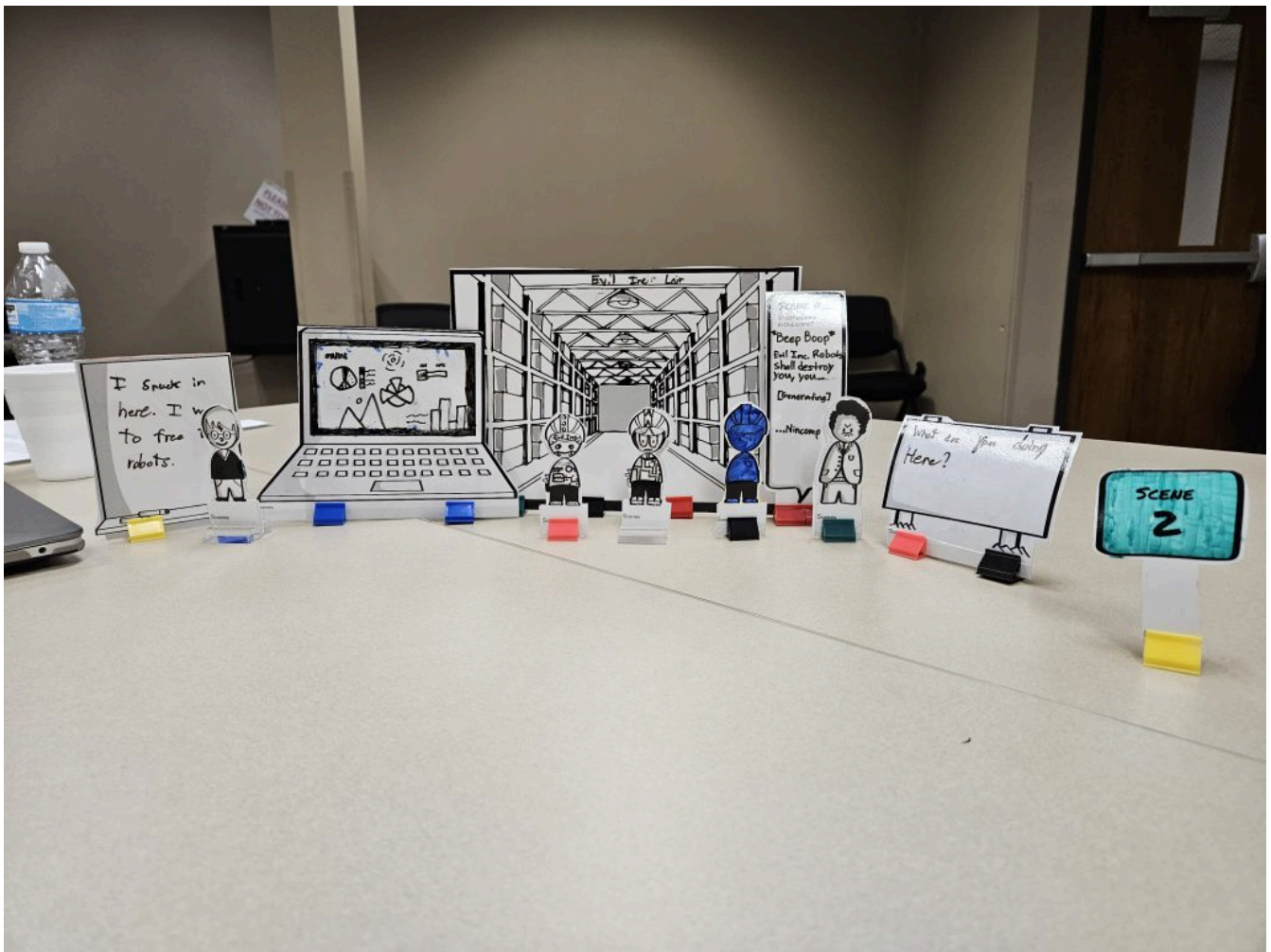
Not yet but we did reach a major milestone and had a fantastic research visit with kids from the Storm Lake community. We had the pleasure of working with 12 kids, ranging from middle school to first-year college students. After introducing ourselves and our research, we set up three tables, each with laptops in front of them, and the kids started to play our game

I sat with a group of three middle school boys as we played the game together. I was astonished by how quickly they grasped the mechanics and combat aspects. Their evident game knowledge made the combat puzzle seem like a walk in the park for them, and impressively, they completed the game on their very first try.



After gathering their feedback, I talked further with the boys about what they wanted to do for their future.. One of them wanted to become a software developer, while another had a passion for Zoology and wanted to pursue it as a major.

With their creative minds at work, we moved on to the next task: designing a new level in the game. Together, we brainstormed ideas, and they contributed their thoughts on how to make the game even more engaging. Utilizing props they created a storyline and scene that would fit seamlessly into the game.



On Wednesday, we had the opportunity to present our research to the CUNY REU students. While our presentation might not have been the most polished due to the recent nature of our research trip, it served as a nice recap of our experiences in Storm Lake and our learnings from the previous day. Sharing our insights and discoveries with the CUNY students was a valuable experience, and it allowed us to reflect on the progress we've made.

After work, we decided to unwind and have some fun by going bowling in the basement of the Memorial Union. To my surprise, it turned out to be a surprisingly good time, as we discovered that the bowling alley was glow in the dark. It added an extra element of excitement and novelty to our bowling experience, making it an enjoyable and memorable evening.

And that's a wrap for this week. Hopefully my next blog post will involve more escapades.



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Week 7 – Game Dev Tycoon

[July 13, 2023](#)[Curtis Johnson](#)

Our research trip to Storm Lake has been scheduled for Tuesday, July 18. We will depart at 12:30 and expect to arrive by 3:00, allowing us ample time to set up our laptops and prepare for the kids to test our game. We anticipate having between 10-20 high school age kids participating in our research. The initial phase will involve them testing our game and providing us with valuable data through a survey. Following this, we will split into two focus groups, enabling us to gather personal insights that can be used to make broader statements about the youth in Storm Lake, such as their emphasis on community when making decisions about their future after high school. Subsequently, we will begin incorporating our research findings into our poster board and ultimately into our video game.

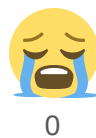
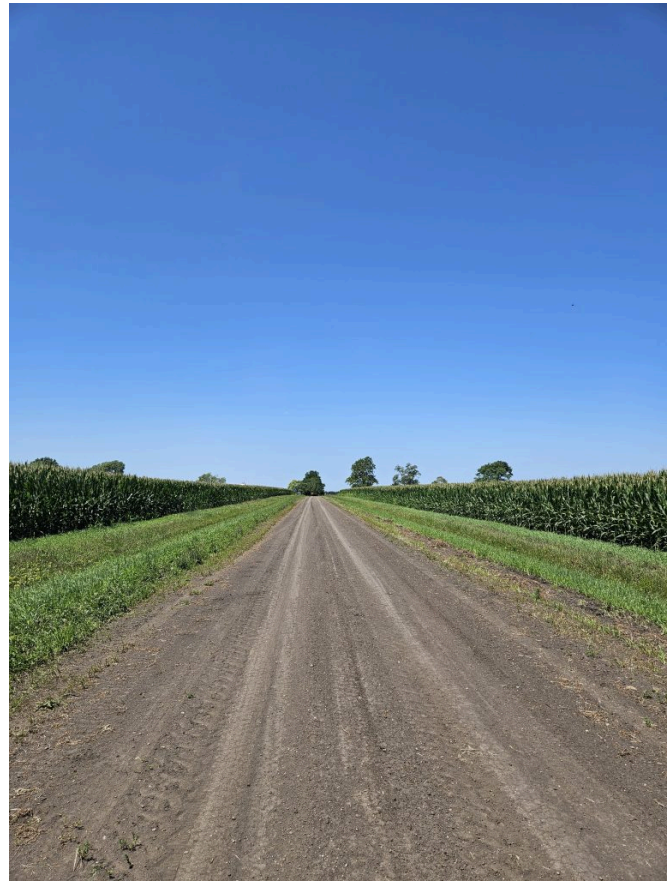
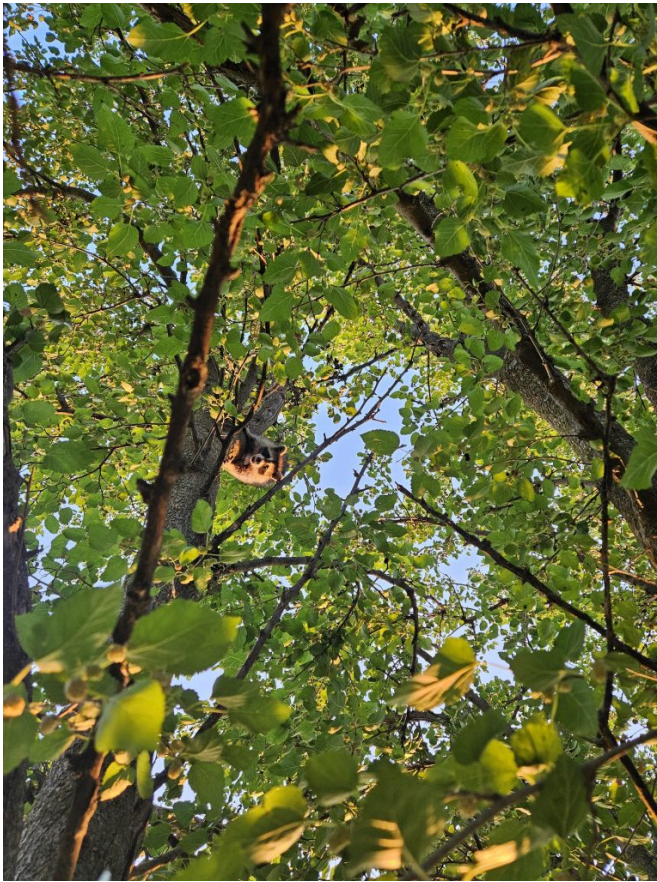
This week, our team has been assigned the task of creating a working proof-of-concept text-based game using Twine. We are full steam ahead in the development process, with Kris handling the creation of pictures and screenshots in Unity, and Andric working on the text and code logic for the story. My role is to thoroughly test the game and make any necessary adjustments to the dialogue and flow to ensure a seamless gameplay experience. The entire game development process has reminded me of various tycoon games, particularly Game Dev Tycoon, although our ultimate goal isn't to strive for a billion-dollar success like in the game.



This week, we were fortunate to attend two exceptional luncheon lectures that left a lasting impression. On Tuesday, Debra Kumar delivered a captivating presentation on her career choice to work in the industry. What made her perspective unique was her status as neither a professor nor someone looking for a long-term teaching position. Her insights provided valuable industry-focused insights that resonated with many of us.

However, it was Thursday's luncheon lecture by Sarah Bentil that truly stood out as my personal favorite of the summer so far. Sarah's memorable research and engaging videos created an informal yet impactful research presentation. Her presence in the room made us feel comfortable to ask thought-provoking questions, creating a lively and interactive atmosphere. What set her lecture apart was her continued engagement with us even after lunch, where she interacted with various games and offered valuable advice. It was refreshing to see her dedication and willingness to connect with the audience beyond the confines of a traditional presentation.

I hope you enjoyed this week's blog post, here's some pictures from my adventures. See you next week



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Week 6 – End of Major Course Activity

📅 [July 7, 2023](#) 👤 [Curtis Johnson](#)

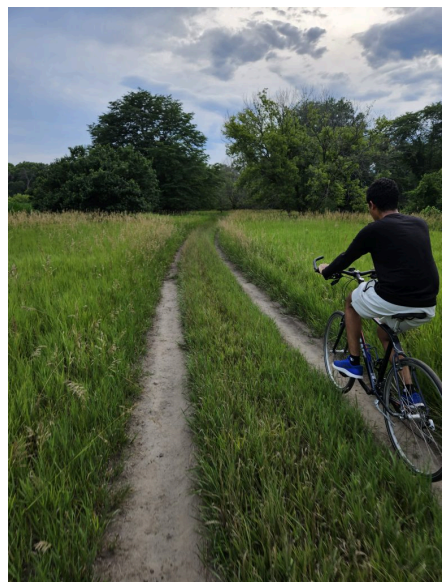
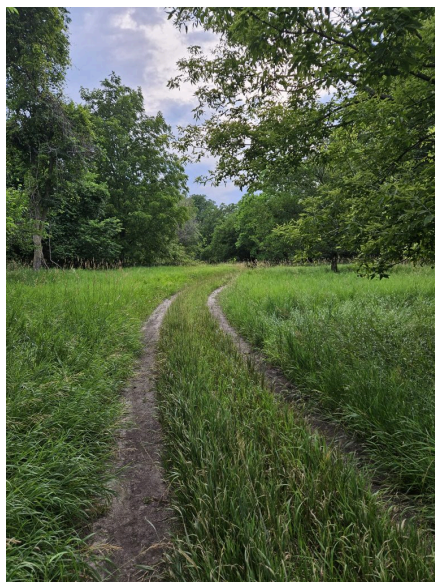
On Tuesday, I took Andric on a bike ride to a secret spot I had discovered. While I can't disclose the exact location, I can tell you that the route led us along a scenic dirt path surrounding a field adorned with mulberry trees and black raspberry bushes. We couldn't resist stopping to enjoy some delicious ripe berries. Later, we stumbled upon a cluster of bee hives and got close to them and enjoyed listening to the buzzing activity within the boxes.

Wednesday brought new challenges to our machine learning project as we encountered issues with getting the lab computer to utilize its GPU instead of the CPU. GPU processing

would significantly speed up image processing, reducing the time required to create an epoch or iteration of training from two hours to a mere four minutes.

On Thursday, even though we hadn't completed our project, we began working on our presentation. It was important to showcase what we had learned even if it wasn't 100% complete. We also had the pleasure of attending a luncheon lecture by Carmon Gomez, who discussed sustainability in agriculture and food production. Her vibrant personality and integration of personal experiences with her research made for an incredibly enjoyable presentation. After work, Eliot, Sarah, and the rest of the VRAC bunch tried the task of making homemade pasta. . The process of handmaking pasta truly highlighted the amount of work and attention to detail required to create something completely from scratch. Later that night, my friend, Andric, and I joined in a game of disc golf near Freddy. To our astonishment, Andric proved to be a natural talent, consistently outperforming us with incredible shots. His skills were truly impressive, and he kept surprising us with his remarkable abilities.

Finally, Friday arrived, and we had the opportunity to present our Machine Learning project, allowing us to showcase our hard work to the rest of the VRAC community. It was a unique experience to give a presentation about a project we hadn't fully succeeded in, but it was gratifying to walk through our process, explaining the obstacles we encountered and the steps we took to address them. Overall, I am glad I chose this project, and I am proud of my team for their dedication and effort in tackling the challenges we faced.







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Week 6 – Knee High by 4th of July

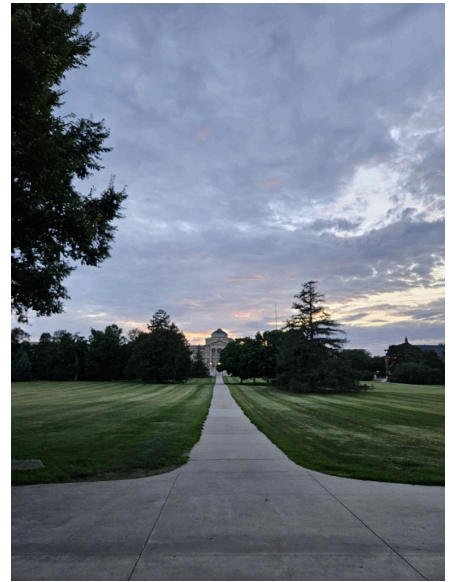
[July 4, 2023](#)[Curtis Johnson](#)

Indeed, the corn is thriving, and as I mentioned, it's not just knee-high; in some places, it's even head-high. Although this saying is typically associated with sweet corn rather than field corn, it's still a nice expression of the summer's progress.

We had an exciting game design session with the Storm Lake students, and after much brainstorming and creative collaboration, we finally settled on a name for our game: "Sabiduría," which means wisdom in Spanish.

Following that, we dived into our machine learning project and began training some of our models. The process was time-consuming, but we were determined to make progress for next week. As the night fell, I embarked on a unique experience, joining my friend on a picture tour of campus. He had an old film camera, and it was cool to handle its mechanical aspects and appreciate the complexity it offered compared to a digital camera.

During the tour, my friend showed me the buildings where he had taken classes, and it was a fantastic opportunity to step inside buildings I had been passing by for the past month. Exploring the campus through the lens of an analog camera added a nostalgic and artistic touch to the journey, making it a memorable experience.



After returning home for the weekend, I decided to be strategic about my run and chose to do it during the hottest part of the day. Being someone who tans easily, I welcomed the opportunity to soak up some sun while running on the familiar gravel roads I grew up with. It turned out to be not be such a horrible experience but I'll certainly enjoy the cooler weather later this week

On Monday night, I traveled back to Ames, eagerly anticipating the grand fireworks display. I convinced Andric to join me, as he had never seen a fireworks show before. I hyped up his enthusiasm by telling him about the spectacular finales I had witnessed in the past.

However, to my disappointment, the Ames fireworks display didn't quite live up to my expectations. The entire show lasted only 15 minutes, with the finale lasting a mere 30 seconds. Nonetheless, seeing the parking lot filled with excited spectators gave me a taste of what an Ames game day would look like, and that aspect of the night was enjoyable.





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Week 5 – Machine Learning

[June 29, 2023](#)[Curtis Johnson](#)

I didn't expect the Deeper Dive to actually actually diving, but we've dove head first in the material nonetheless. We have been working on defining our project and understanding the intricacies of machine learning. Our idea for the project is to take Adam's machine learning code for an autonomous car in VR and attempt to optimize it ourselves, aiming to develop the fastest-learning Anthonomus car and ultimately beat Adam's car.

While delving into the process of machine learning has been great, I must admit that grappling with Python, a language I have never used before, has presented a significant challenge. Understanding the concepts and applying them in Python requires a different way of thinking that I am currently struggling to grasp. However, I'm just glad to be able to work with something technical and wade through the muddy waters as much as possible.

On Wednesday, I woke up to an unprecedented experience, especially for someone used to living in the countryside. The wildfires in Canada had significantly impacted the air quality index in Ames, reaching a staggering 162. Despite the challenging conditions, I still had my seven-mile run. Running through the dense, chilly smog made me disagree with those who called the compromised air quality "Free Fitness." Until the air clears, I've decided to drive out to the country roads for my runs.

The major highlight of the week was the visit from the students from Storm Lake, who came to assist us with our research. We had the opportunity to meet them and discuss our summer research project. Later that evening, we went out to dinner together, although it was a bit hectic for me since I had initially planned to attend a concert in Des Moines with nonrefundable tickets (sorry, Andric). Nonetheless, the dinner was enjoyable, and it allowed us to get to know our graduate mentors better.

Thursday began with an HCI session focused on what to expect from academic conferences and how to navigate them. We then had the Storm Lake students join us for a Luncheon Lecture by Myra Cohen, where she presented her research on musical perception and coding. Our interest was piqued when she demonstrated her program, which played different sounds depending on the code being run.

Later in the day, we had a significant meeting with the Storm Lake students atop the Innovation Center, providing a refreshing change of scenery from our usual meetings at the VRAC. During this meeting, we brainstormed themes and story elements for our game, while also listening to the students share their unique experiences of transitioning from a community like Storm Lake to a school like Iowa State.

I'm looking forward to another productive day working with the Storm Lake students tomorrow. I can't wait to start making some real tangible progress on the game.





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Week 5 – Wedding Crashers is a Documentary

[June 26, 2023](#)[Curtis Johnson](#)

The past three days have been incredibly busy, so let's jump right in. On Friday, we began our Deeper Dive into machine learning by providing a brief overview of the basics and its practical applications. Our coding sessions will primarily be in Python, utilizing Anaconda, a platform designed for scientific computing and data science. Although I haven't taken a Python class yet, I understand the value this knowledge will have in future courses such as malware analysis and reverse engineering.

Following that, we had a three-hour meeting to discuss our summer research project. It was an excellent opportunity for each of us to share the progress we've made over the past week and receive valuable feedback and questions to further enhance our project. I was particularly excited to learn that I might have the chance to incorporate a cybersecurity aspect into the game we're developing. While designing video games and creating a story are slightly outside my comfort zone, I am eager to get back to my bread and butter of cybersecurity.

To conclude Friday, we engaged in another Deeper Dive session, where our main focus was writing code to better understand the process of creating machine learning tools. This hands-on experience will provide a good foundation for what we can do with our Deeper Dive project.

On Saturday, the heavy rain kept us indoors for most of the day, so we decided to make our way to the Ames public library for our final mandatory activity. I picked up a book on the religious practices of ancient Greek and Roman cities.

Afterwards, the guys and I headed to Seasons for lunch. To our surprise, we were the only people in the dining hall. It felt strange yet fascinating to have a whole kitchen of chefs just to ourselves.

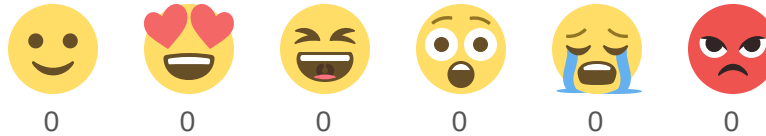
Now, onto the highlight of the week—the main event. A friend from school invited me to crash a wedding in Adel since he expected to be bored throughout the night. As someone who never misses an opportunity to dance, of course I accepted his invitation. The venue was nestled deep within the property, surrounded by woods. It was a fun experience catching up with my friend and showcasing a line dance or two. While he may have found “Church Clap” a bit overwhelming, he managed just fine with “Copperhead Road.” The dancing was in full swing when they abruptly kicked everyone out at 11 pm. Nonetheless, as an uninvited guest, it would be unfair to critique a wedding that I wasn’t invited to.



On Sunday, I visited Reiman Gardens and explored its scenery. It had a nice tastefulness, with its wooden structures, ponds, trees, and walking paths. While walking through the gardens, I couldn’t help but laugh at the giant gnome they had hidden in the back. Although, I didn’t manage to get a photo of it, I’ll hopefully have better luck next time.

During the walk, I got to hear even more intriguing ISU lore. It was quite amusing to discover that the College of Design building was actually designed by students at the time. However, there was one small oversight—they forgot to include bathrooms in the initial


plans. As a result, the restrooms had to be squeezed into nooks and crannies throughout the building. The irony that the very building where architects have their classes is considered the worst built on campus adds a touch of poetic justice to the whole thing



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Week 4 – Deeper Dive

 [June 22, 2023](#)  [Curtis Johnson](#)

This week, we took our garden scene from Blender and imported it into Unity. I focused on enhancing the realism by retexturing the grass and paths, utilizing textures I imported from the Unity store. Additionally, I incorporated various farm animal models such as sheep, cows, and a pig, placing them within a pen. To add liveliness to the barnyard, I scattered roosters and geese around the area.

To bring dynamic movement to the scene, I implemented a script that allowed the pig to move forward and turn. I positioned the camera on top of the pig, enabling it to move along with the pig's motion. Taking it a step further, I added the same script to the other animals, resulting in a chaotic pen with all the farm animals in constant motion.

looking at my interactive scene, I started trying to turn it into a game. The goal was to guide the pig out of the pen while avoiding collisions with the other animals. Admittedly, the game didn't turn out to be exceptionally exciting, but I enjoyed the fact that I could utilize my imagination to craft a game from out of nothing.

To my surprise, Unity proved to be less complicated than I had anticipated, allowing me to look more into the creative process. The it was fun bringing my creation to life and being able to share it with my friends.



On Tuesday, we had a Luncheon Lecture with Dr. Stephen Gilbert. His presentation revolved around his educational journey and the various institutions he studied at. Afterward, we had the opportunity to choose the topic of discussion, and we were particularly interested in his story about how life can take unexpected turns, even when you think you have it all figured out.

Dr. Gilbert then proceeded to share his personal experience of living in Numidia for a year, which was a captivating and insightful narrative. Personally, I find it more engaging when lectures focus on personal stories rather than solely on research topics. It allows us to explore the diverse paths one can take during graduate school, which is better for us as undergraduates who are still uncertain about our future endeavors.

Overall, I appreciate the opportunity to gain insights into different aspects of academic life, beyond just the research focus. It broadens our perspectives and helps us navigate our own educational and career paths more effectively.

We also received our group assignments and topics for our deeper dive this week. I was placed in an all-guys group consisting of Andric and Ayman. Our deeper dive revolves around machine learning, focusing more on using Python and its various tools and functions. I deliberately opted for a technical project to achieve my goal of delving into challenges of the field. I have confidence that this decision will provide me with a rewarding and challenging learning experience.

We recently had a photoshoot for the REU program, capturing promotional pics of us wearing ISU t-shirts. It was a fun experience, walking around campus and enjoying the surroundings. As I continue to explore, I'm becoming more familiar with the different places on campus. The photos turned out great, they do a good job depicting the positive environment we're creating during our time together in Ames.

Until next time, see you in the 515!



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Week 4 – Yeehaw



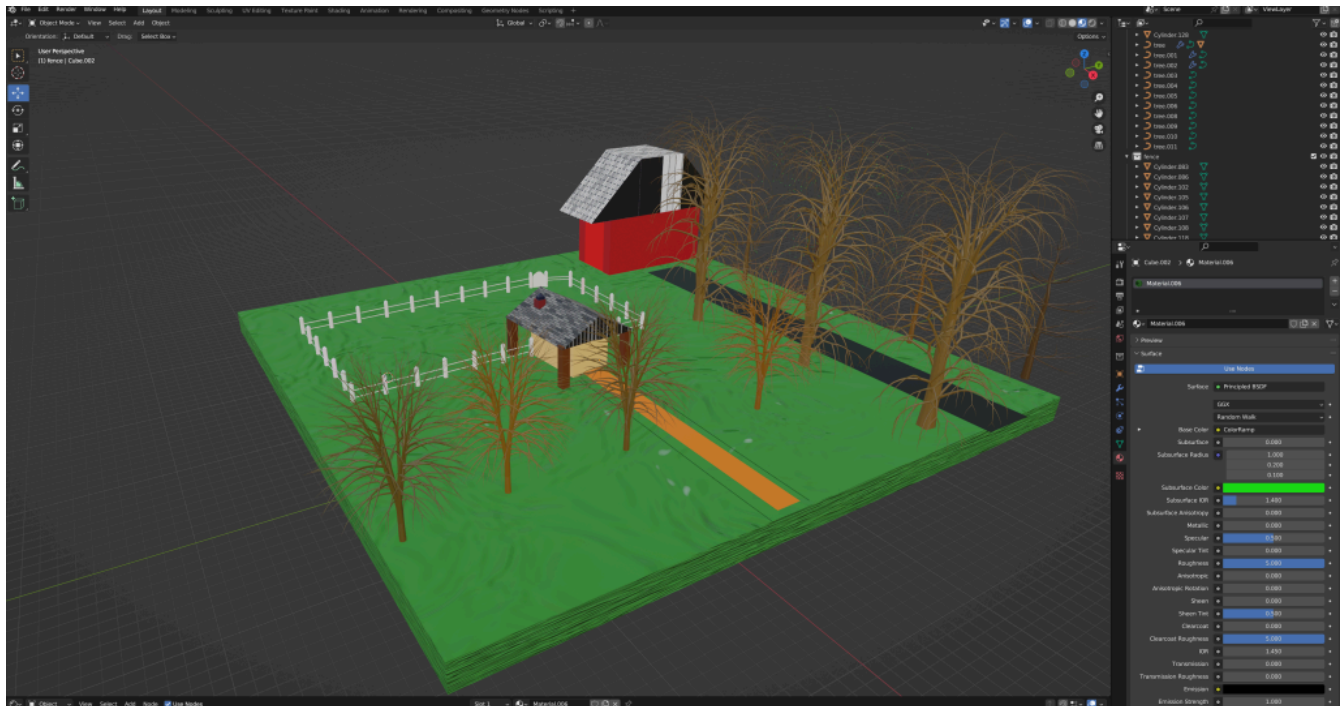
June 19, 2023



Curtis Johnson

On Friday, we finished our Blender session by creating a garden scene, which we will later import and utilize in our Unity workshop on Monday. For my garden scene, I based the

design on a photograph I had taken a few years ago during one of my bike exploration trips. My intention wasn't to create something overly complex; instead, I focused on using cubes and blocks to recreate the property as accurately as possible. I believe I achieved a satisfactory outcome, but I plan to add more details and refine the scene further once we delve into Unity.



Our mandatory activity for Saturday was a hike at Ledges State Park, located just a short

20-minute drive from campus. Since we arrived early, the park was pleasantly quiet, offering us a great start to our adventure. We began by hiking up the bluff, aiming to reach Crows Nest, although we found the spot to be rather underwhelming, lacking the expected scenic views. Undeterred, we continued along the trail, following the road until we reached the river. Our next endeavor involved attempting to skip rocks across the water, resulting in more splashes than successful skips.

After the hike, I headed home to see my sister, who was visiting from Dallas. Since starting school, I hadn't had the opportunity to ride a horse, so I took the opportunity to get back in the saddle. However, during the saddling process, my horse became startled and raised her front leg, accidentally striking my calf. Although it wasn't a career ending injury, it served as a reminder of the dangers of horses. Despite the incident, I managed to enjoy a wonderful ride, and it felt good to be back home again.



On Sunday, I attended an Iowa Cubs game to celebrate Father's Day. It turned out to be an action-packed game, making it a great outing overall. I made sure to bring my dress clothes back to Ames with me, as I want to be prepared for the upcoming research symposium later this summer. Additionally, I'll be crashing a wedding on Saturday, but I'll save that story for another blog post.

Later that night, I walked and enjoyed some ice cream with an intern from a different REU program. We had an engaging conversation about our respective programs and the projects we were working on this summer. Surprisingly, we both worked in Howe Hall, although in different fields. While I focused on my work in the VRAC, she specialized in aerospace engineering, primarily dealing with computer simulations. It was interesting to find common ground and shared experiences as interns, despite attending different schools.

Looking ahead, this week is shaping up to be exceptionally busy with a series of meetings and workshops lined up. As a result, I anticipate a demanding schedule ahead.

Until next time, take care



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Week 3 – Titanic



[June 15, 2023](#)



[Curtis Johnson](#)

In this week's workshops, we started learning different CAD (Computer-aided design) software, exploring applications like Solidworks and Blender. For many of us, it was a completely new experience, and the learning curve proved to be quite steep. Personally, I hadn't interacted with this type of software since my freshman year in high school, and it reaffirmed my decision of not majoring in engineering in college.

On Monday, we embarked on a crash course in Solidworks, which truly lived up to its name. The tutorial provided a basic understanding of the software's interface and functions, but it fell short when it came to explaining the purpose behind each action. As I attempted to create a candlestick model, I made a mistake with an arc, resulting in the entire design being messed up. It was only then that I realized the importance of precise measurements in such a software.

Moving on to the next CAD software, Blender, I hoped for a smoother experience, but unfortunately, it didn't prove to be any better. Our initial lesson involved manipulating a

sphere to sculpt a cat, adjusting different planes to form the ears, eyes, nose, and mouth. However, we were abruptly thrown into the deep end with the next task of creating an entire garden scene, which proved to be a substantial leap forward and an even steeper learning curve than the hills of southern Warren County.

I hope that on Friday, we receive more detailed instructions and guidance to navigate these challenging workshops. At the moment, it feels as if we have been forced into the deep end without sufficient support or preparation.

We've had great success brainstorming a t-shirt design for this year's program. With nine of us in the program, we decided to go with the "VRAC" bunch theme, inspired by the 70s show, The Brady Bunch. Kris drew portraits of each of us, which we'll arrange in a grid on the back of the shirt, similar to the show's format. The design is already much cooler than last year's, and we're all excited to create a t-shirt that we'll proudly wear instead of hiding it in our closets.

Finally, I had a conversation with an aerospace engineer who regularly attends classes in Howe Hall. He told me a cool story about how it was constructed: the building was actually designed to resemble a ship, specifically the Titanic. Intrigued by his words, I decided to investigate further, and to my surprise, I could clearly see the resemblance he was referring to. However, it seems that the other interns lack the imagination or keen observation skills to perceive this similarity. To help them understand, I prepared a helpful visual comparison to bridge the gaps in their perception.



Homework

This is for the Intro to HCI post lesson homework. Yes we have homework during the summer but I swear its not that bad. Our assignment was to find two interfaces that are difficult for the user to operate and find what doesn't work, what does work and what we would do to make it better.

1.

First, I think the ISU-issued wallets and keys are unnecessarily complicated and cluttered. In our current setup, we have a single wallet that contains multiple cards: a Student ID, an apartment card, a meal plan card, and a key to access our apartment after 8:00 pm. Although these cards serve different functions, they essentially accomplish the same goal.

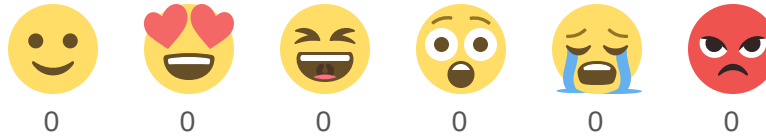
At Dakota State University, on the other hand, they have streamlined the process by integrating all these functions into a single ID card. Additionally, they have even taken it a step further by introducing the option to activate the ID on your phone, allowing you to perform all the necessary tasks conveniently.



While I understand that ISU may not specialize in technology (tongue-in-cheek), implementing similar technologies would significantly reduce the clutter and complexity associated with managing multiple cards and keys.

2.

Furthermore, I have a strong dislike for the design of our kitchen in the apartment. One particular issue is the placement of the small garbage can, which can only fit in the narrow space between the kitchen nook and the dishwasher. This arrangement creates a major problem: whenever someone is loading or unloading the dishwasher, it becomes a challenge to maneuver around the garbage can, often resulting in spilled garbage and a messy situation.

To address this problem, a simple and effective solution would be to incorporate a garbage drawer within the kitchen. By having a designated drawer that can be easily opened and closed, we can maximize the limited space while ensuring an efficient and convenient trash disposal system within the kitchen area. This adjustment would greatly enhance the functionality and usability of the kitchen while eliminating the hassle and potential mess caused by the current setup.



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Week 3 Lets Get the Show on the Road

 [June 12, 2023](#)  [Curtis Johnson](#)

I have decided that for the remainder of the program, I will structure my blog posts to be released every Monday and Thursday. This way, I can make the Monday blog about the events from Friday and the weekend, focusing more on fun activities, while the Thursday blog will be centered around work and updates on our projects. Although they won't be strictly categorized, that's the general idea I want to stick with.

To start off the fun blog, the after-work yoga session wasn't terrible. As a track athlete, I am reasonably flexible since we do a lot of dynamic exercises to warm up our muscles before our speed workouts. However, one thing that isn't typically part of our training is balancing. Balancing on one foot definitely pushed me out of my comfort zone, but it seemed that everyone managed to survive the yoga session, so I consider it a success. Afterward, I spent two hours rock climbing and had the opportunity to meet some cool guys who were also working in Ames over the summer. They gave me plenty of restaurant recommendations, which was fantastic because I love trying new places.

Friday was a relatively easy and relaxed day. We had a project meeting and created a Miro board, which is essentially a digital sticky note board, to organize our thoughts about the Mission Admission game we played and how we could incorporate its elements into our own game. Later, we wrapped up the C++ workshop and then played a 2-bit Slither.IO game hosted on a Raspberry Pi which we connected online through port 3000.

After work, I gathered all the guy interns, and we headed downtown to Great Plains Sauce & Dough Co. Despite knowing that Ames can be dead during the summer, I was still surprised to find downtown relatively quiet on a Friday night. We managed to squeeze into a booth and enjoyed our giant pizzas that we had ordered. Afterwards, we drove back to campus and decided to take a detour through Greek Street, which is more like a Greek neighborhood. Everyone was amazed by the size and design of the fraternity and sorority houses. This experience was definitely the highlight of the program for me so far, as I enjoy exploring and sharing my home state with the other interns.



On Saturday, we hit the farmers market, which turned out to be just as busy as I had anticipated. To be a good tour guide, I recommended parking at the Cubs stadium since it

had lots parking and was located near the farmers market. Amy and I both drove separately, so we managed to arrive at the planned meeting spot while the others got a bit turned around and ended up parking in a garage across the river. After a short game of “Where are you,” we eventually reunited with the rest of the group and made our way to the farmers market.

The weather was perfect for the market, and we took the opportunity to explore the entire area before deciding on what to eat. I suggested trying pupusa, a dish from Honduras that consists of a griddle cake filled with pork and cheese.



On Sunday, I decided to go for a run at the ISU XC course, but I must admit, I found it a bit underwhelming. Having experienced national-tier courses at places like FSU and Wisconsin with their scenic landscapes and abundant tree coverage, I had higher expectations. However, the ISU XC course turned out to be more of an open field. While it provided a pleasant running environment, I don't think they'll be hosting the D1 XC national meet anytime soon.



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Week 2 – C++



June 8, 2023



Curtis Johnson

After an eventful Monday, it was a nice change of pace to take a break and enjoy a more relaxed day on Tuesday. The program's schedule follows a pattern where we have workshop sessions on Monday, Wednesday, and Friday. On Tuesday and Thursday, however, our focus shifts towards our research projects, and we have dedicated office hours to schedule meetings with our research mentors. These meetings serve as valuable opportunities to discuss our next steps for the summer research project.

Speaking of projects, we have had numerous meetings and engaging assignments that have given me a general idea of the research project I will be working on this summer. My project builds upon previous REU research and forms part of a broader initiative aimed at enhancing postsecondary education accessibility for the community of Storm Lake, Iowa. Our approach involves developing a 3-D game specifically designed for first-generation students. The ultimate goal is to bridge the gap and empower these students by showing them that pursuing higher education is not something to fear but rather an opportunity to improve themselves and their surrounding community.

To add a personal and relevant touch to our game, we are planning to visit several students from Storm Lake and engage in discussions about their unique stories. By incorporating their experiences into the game, we aim to create a relatable and immersive environment. The underlying objective of these interactions and research is to determine the most effective way to convey agency to these students. We want them to feel empowered and in control of their lives, encouraging them to pursue their college ambitions.

In other news, the SPIRE website banner has finally been updated with our picture on the ISU sign. For me, that was the final piece that made the entire program feel real. I'm looking forward to an amazing summer ahead, and I hope to break away from falling into a predictable routine so that I can fully embrace and enjoy this unique experience.

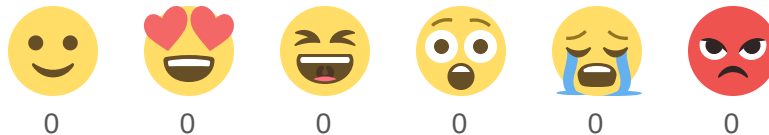
On Wednesday, we continued with the C++ workshop, and I was pleasantly surprised that we started to cover topics I hadn't been exposed to before. Initially, I had doubts about the extent of technical knowledge I would gain this summer, but as I look ahead at the

upcoming weeks of workshops, it appears that I'll have my hands full with a wide range of new technical skills to learn.

After work, I joined two other interns from my hometown for a round of frisbee golf. It was a fun way to to walk and talk and do an activity outside of the program. One of the interns is currently working in a prion lab at the USDA national laboratory, and I enjoyed hearing about her work, especially since it was something unfamiliar to me like lab work.

Today, we had the privilege of listening to Eliot Winer, the director of the VRAC, who shared his graduate school journey and experiences as a professor. The talk revolved around the nature of graduate school and whether pursuing it would be worthwhile. In short, he strongly believed that graduate school is a valuable path for everyone in the program, and he provided us with some fantastic tips on how to apply and succeed in that realm.

After work, we have a mandatory yoga session, which I'm not particularly thrilled about. However, I'm hopeful that I'll be able to go rock climbing afterward, which is an activity I'm much more excited about.



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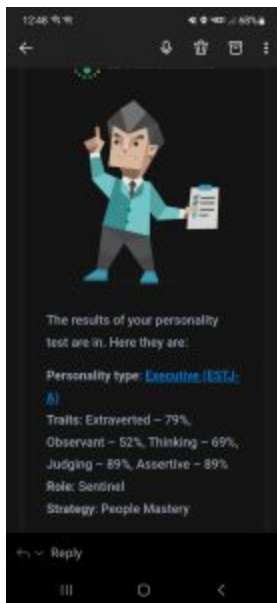
Week 2 – Executive

 [June 6, 2023](#)  [Curtis Johnson](#)

Finally, work can begin, marking the start of the 9-to-5 life. But before diving into the workweek, let's do a quick recap of Friday and the weekend.

On Friday, we took a Myers-Briggs Assessment, which revealed that my personality type is ESTJ-A, also known as Executive. This result didn't come as a surprise to me, considering the year I've spent in college Track, surrounded by a fantastic group of outgoing and confident men. Their influence has undoubtedly made me even more outgoing and confident as well.

Saturday was an exciting day as we visited an escape room in Des Moines. The escape room was game themed, adding an extra layer of enjoyment to solving various puzzles, such as axe throwing and a golf arcade game. After the exhilarating experience, I drove back home for the weekend and assisted my family in moving bricks for a garden. Unfortunately, I had to leave Sunday which meant missing out on one of my usual summer activities: helping with hay. It's a bit of a bummer, as I've always enjoyed participating in that.



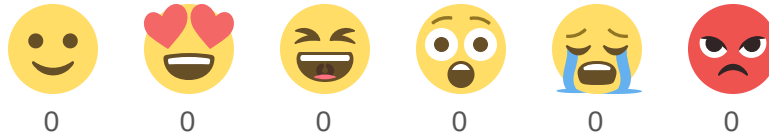
Monday turned out to be a fantastic day as we started our C++ classes. One of my primary goals this summer is to engage in more technical activities, and this was an excellent way to kick-start that ambition. Having taken two coding classes last semester, I didn't feel too nervous. Instead, I was excited to learn something new and get my first taste of Visual Studio.

As a Cyber Operations major, my coding experience has been quite old-school, focusing more on memory allocation to write secure code that's resistant to exploitation and vulnerabilities. Consequently, our coding classes are in C, a language that's been around for over 50 years. We would SSH from the command prompt into a server, which, though reliable gets old after a while.

Thus, I was absolutely blown away by the sleekness and user-friendliness of Visual Studio. It made learning C++ a far more engaging and stress-free experience. Debugging and running my programs became quick and effortless, eliminating the need to memorize

command-line prompts like gcc or ./a.out. We flew through the slide deck, and all gained a solid foundational understanding of the syntax of this new language.

I'm genuinely excited to delve deeper into C++ on Wednesday and have the opportunity to experiment further with Visual Studio.



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SPIRE-EIT 2023 First Blog



[June 1, 2023](#)



[Curtis Johnson](#)

Welcome to my summer blog! It has been a hectic month of May, and I can't wait to officially kick off this summer. For some context, the last few weeks have been filled with constant moving and traveling all over the Midwest. The first leg of my journey involved wrapping up school and attending our Conference meet in North Dakota. After that, I drove back home to Iowa for a day and immediately hit the road again to visit my folks on the farm in Wisconsin. Lastly, I flew out to Marion, Indiana, to participate in the NAIA National Outdoor track meet. Phew! That was a lot of traveling. I'm grateful to have finally arrived in Ames and start my summer (and hopefully stay in one place).

I arrived in Ames on Tuesday and immediately got to work setting up the apartment. After a long afternoon of grocery shopping, rebuilding my bedframe, and moving in, I learned a lot about living on my own. I discovered that regular dish soap does not work in a dishwasher, as it resulted in a flood of bubbles in my apartment. Additionally, I learned the hard way that I have to be careful when moving my monitor; otherwise, I risk cracking the screen and needing to replace it. After enjoying a fantastic welcoming dinner and meeting the other interns, day one of the program came to an end.

Day 2 was filled to the brim with lots of walking, whether it was walking to VRAC, on the tour, getting our IDs, going to lunch, or completing the scavenger hunt. It was a long day of walking. After returning to Freddy, I met up with another intern from my hometown, and we went rock climbing and played disc golf. The next day, we were introduced to the projects for the year and met with our research mentors to discuss the timeline and goals.

of our respective projects. Our group seemed to consist of passionate individuals, and I am grateful that the other interns and I were selected to be a part of the 3D Game For First-Gen Students. Once I learn more about it, I will provide a more in-depth description.



Trey man and a deer





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