

SPIRE-EIT 2024



SUMMER PROGRAM FOR INTERDISCIPLINARY RESEARCH AND EDUCATION – EMERGING INTERFACE
TECHNOLOGIES



Harrison – Final Day



August 3, 2024



Harrison Brown

As my roommates are packing up the last items in their rooms, I am quickly writing this last blog. I have missed many days of blogging and know I should speak about what we did during the last week, but it was extremely eventful. In this last half hour before I leave my room, I would not be able to appropriately include everything. I have therefore been thinking about what to write/include in this final blog post. There is so much I want to say that I do not know how to word it. As I further write, I will try to convey that this was an amazing experience. I am a different, more knowledgeable person than when I came to Iowa two months ago. This REU experience was full of many firsts. The first time I did research, my first time developing a VR game, my first time writing a research paper, my first time using EEG, my first time living in Iowa, my first time using Unity, my first time bouldering, my first time, presenting and making a poster, and most importantly, my first time being surprised by an experience. All of these firsts were not only special because they played a part in my growth, but because I enjoyed every one of them. I was able to learn so much from the mentors, the interns, and the VRAC staff. These firsts all being good experiences shows how important it is to step out of your comfort zone. If people only did things they were comfortable with, there would not be any firsts, and no room for growth. Before coming, I thought it would be mostly research with people I would not often be interacting with in a boring location in the midwest. The only thing I was right about is that it was a slightly boring location. I guess people were telling the truth when they explained Iowa as very flat and full of cornfields. I was wrong about everything else. The people were amazing, and there was so much interaction. People perceive me as an extrovert but there was so much interaction everyday that I often needed time to myself, even though all of my interactions were special and enjoyable. It was sometimes even more tiring than school, which I did not expect from an REU.

There are so many more experiences I can specifically speak about but we have to leave in about 25 minutes and I have to clean up the apartment. I hope I conveyed that this REU was extremely worth the time. I cannot think of many things I would have done with my summer that I would have gotten more out of. Before I stop writing I want to shout out all of the interns for being amazing people to spend a summer with. I have discovered a new friend group/family. I also want to shout out two of the adults that I don't think I can every forget. The first is Eliot. He was an amazing personality around the lab and

I appreciated every interaction we had. Whether he was jokingly (I think) poking fun at me or challenging my train of thought, I enjoyed it. He got me to think in different ways and see how knowledgeable one person can be. The type of person he is is extremely inspiring. I lastly want to shout out my grad mentor Aron. He was the best grad mentor I could have asked for. He was always there for us, whether it was in person or via slack. He was extremely supportive, knowledgeable, and passionate. This made me passionate about the project and learning more from him. His presence made his project become our project and we were able to become fully immersed on his journey to his PHD. He is also just an amazing human being. Even though he may not always be the best with social interactions :, he is kind hearted and always means well. During one conversation I remember him mentioning that he works hard because all he wants in life is to be a good dad. That answer will forever stick with me and it actually very much made me think of my dad and how hard he works for our family. (Shoutout to my mom as well but this specific instance made me think of dad). But anyways, thank you Aron for an amazing experience. And thank you to everyone I interacted with this summer because you all played a role in making my summer unforgettable.



This is a perfect sign-out photo because I like the aesthetic it is during my interview when I recap my experience. I shared how much the experience meant to me then, just as I wrote about how much it meant to me now. (Thank you Paul for the photo).

Harrison – Day 51 & HCI Assignment

 July 23, 2024  Harrison Brown

It has unfortunately been a while since I have last blogged so this will have to be a recap of a lot of the work I have been doing during that time. I want to first start out with our assignment for HCI:

We were tasked to think about our multidisciplinary backgrounds and find a research question that encompasses three areas of study. I study economics and computer science at school, and I am trilingual, meaning I have to love language. I will therefore add linguistics to my background as I done a bit of linguistics in the past. These disciplines, especially linguistics, seem difficult to combine but I can try. My research question that combines all these disciplines:

How do language limitations in modern technology affect economic behavior?

That simple question was a lot harder to come up with than initially expected. Now however, I should talk a bit about what we have been doing up until these last two weeks. I should start by saying that we have many things due very soon. We have to finish our project presentations by this Friday, we have to submit our project poster by Friday as well, and we have to submit our paper by next Wednesday. All this while trying to finish up our actual experiment. We have been very good so far at dividing up roles for everything we need to get done. Sophie, Lydia, and I have all been trying to combine our skills and focus on different aspects of our final VR unity environment classroom. I have been working on a trigger that would allow us to sync the Muse brain stream with events in the classroom, Lydia has been working on interactions in the classroom and getting their level of curiosity for each question onto an excel file output, and Sophie has been working on getting the questions to pop up in VR. Combining all of this will allow for our project to be complete. If we can successfully look at a person's brainwaves in a virtual environment, doors to many other uses open up. I am very surprised that people have not done this before, but we could be overlooking something. So far though, it seems as though we can put what we have been working on in the lab, onto Unity and get someone hooked up to the classroom environment. With all this work, we have been doing many pilot tests in the lab. We have been running the whole trivia paradigm with participants are hooked up to the 64-electrode EEG cap. These studies each can take between 1-2 hours plus cleanup which is almost our whole afternoon. We are hoping to get usable data before the end of the week for both our poster and our presentation, but for that, we will have to cram. Because I finished working on the trigger before Lydia and Sophie finish in the environment, I have been starting most of the poster work, working a bit on the paper, and finishing the presentation. I am a bit envious of them coding while I write but I know that I need to improve on my writing more than my coding skills, so I am okay with it. Plus, I got to code the trigger which was something I have never done before. Academic writing, however, is harder than I expected. Especially the methods section, which everyone said would be the easiest because you just write exactly what you did. However, it is hard to break up what we did into something that makes sense and it is difficult to include every detail. I prefer more creative writing like the discussion or even the results. I guess the only way to improve on skills is to step out of my comfort zone, but no one said I had to enjoy it. I guess I am just blogging in the morning to push back the inevitable writing. I hope I can lock in and write well so that when the rest of my group sees it, they feel a lot less stressed about everything that is due and can focus more on the actual experiment. I am almost done writing this blog, but I want to add that Aron has been an amazing mentor along the way. He has been supportive and amazing at providing feedback with everything we do. Even the things that do not directly benefit his project, he takes time to make sure we do it well. I could not have asked for a better mentor, and I have very much enjoyed this project and found a new slight interest in neuroscience. Below is a picture of our VR classroom for context.



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Harrison – Day 44

 [July 16, 2024](#)  [Harrison Brown](#)

- This morning, we all presented a preview of the presentations for the CUNY presentation exchange next week. Our group's presentation was a lot longer and flowed better than we initially expected. I have high hopes for our presentation next week.
- We had Alex as our guest speaker today. He spoke a lot about engineering and his extremely interesting and long path to get to where he is today in the VRAC. After his presentation, the conversation during lunch drifted to his interest in biking. He seems as excited, if not more excited in biking than research.
- This afternoon we will be meeting with Aron to further discuss our project and implementing VR. These last few weeks will be heavily about implementing our vision into VR and getting it working. I am not sure we will be able to connect the muse and VR in time but we will definitely try our best.



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Harrison – Day 43

 [July 15, 2024](#)  [Harrison Brown](#)

- Friday after the lab, I went bowling with Chuchu and Ezra, a friend we made in another one of the REU programs. I, as the superior bowler, easily beat both of them. I then played a bit of ping pong. This was in the memorial union and made me a bit jealous of all it had to offer. I wish Pomona had a bowling alley in one of their building. At night, some of us started watching Pulp Fiction. This was my second time watching it and it was as good as the first.
- Saturday we went to the Des Moines farmers market and then to Gray's lake. The farmers market was a lot more crowded than I thought it would be but it was a lot of fun. I even found some nice food and drinks in the morning. We then all tanned on the beach at the lake which was nice. It was so hot that day that I was sweating just lying down on the beach.
- Sunday was just a work day. I worked in my room, then went to VRAC to continue working, and then worked some more at night. It was a bit exhausting mostly because I was tired all day.
- Today we have been speaking with our mentor, Aron, about the VR component of our project and using muse. I am excited to start working on that but there are so many other things to do like writing the method section of our paper, or do the presentation for the CUNY schools.



Us at the Des Moines farmers market. There are not many people in the background because this is when it ended.

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HCI – Heuristics Assignment

 July 14, 2024  [Harrison Brown](#)

Our homework for the HCI session was to pick heuristics people use in decision making, then pick design principles to accommodate those heuristics, and lastly reflect on how these can be applied to my project.

- **Affect:** people make decisions based on their emotions
- **Design Principle:** Not including anything to cause emotions to affect participant
- **Design in my project:** None of the questions asked are supposed to trigger any emotions and should just reflect knowledge about a topic. This is why we removed some relating to current events

- **Effort:** people make decisions based on how much effort they need to put into that decision
- **Design Principle:** All parts of the study have to have an equal amount of effort or low amounts of effort put in
- **Design in my project:** Have all the question answers be about three words maximum and the questions are not too long so participants fully read each question and answer instead of skimming through it

- **Availability:** people make decisions based on resources or information available
- **Design Principle:** Have participants only use their background knowledge as information
- **Design in my project:** Ask trivia questions based on participants interests and non-interests to get a mix of high and low curiosity inducing questions

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Harrison – Day 40

 [July 12, 2024](#)  [Harrison Brown](#)

- Yesterday we had a luncheon lecture from Professor Adarsh Krishnamurthy. It was interesting to see how he implemented some of the things I learned in the machine deeper dive into his research. It was a bit of a more complicated lecture as he spoke a lot about engineering concepts I had never heard before but it was interesting because I had never heard any of it before.
- In the afternoon we finally got the trigger working in our projects. This is something our group was working on for a while and a major step in the right direction with measuring response to trivia as it allowed us to look at the timing of user response and what was going on in their brain.
- Today, we have been working on the abstract for our paper. It took us about two hours this morning to finish it which is more than I expected and we are waiting on feedback from our grad mentor. This afternoon might be a good amount of work as we will finish implementing the feedback Aron gave us on our first draft of our lit review and we will be working on our Unity environment.

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Harrison – Day 38

 [July 10, 2024](#)  [Harrison Brown](#)

- Yesterday we had a luncheon lecture from architecture professor, Merate Bakarar. She was an extremely interesting speaker even though her studies were very different from anything we had encountered. She spoke about the architecture of sound and how sound can impact how people perceive and react with buildings.

- We went to Forker in the afternoon did another EEG study with Aron as the participant. Sophie did a great job with making the questions tailored to participant interests. There were some small things we had to fix but overall, everything was working great except for the trigger which we hope to resolve today.
- Last night, we had to start working on writing our intro paragraph/lit review. We had it outlined but putting it into a cohesive essay format proved to be a bit difficult. This morning we continued working on it and it seems like the first draft of the first portion of our paper is almost done.



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Harrison – Day 36

 [July 8, 2024](#)  [Harrison Brown](#)

This weekend was our first big break since we have been here. The interns and I took full advantage of that fact. Because it has been four days, I will have a bullet point for each day.

- **Thursday** – This was after we saw the fireworks at Jack Trice stadium the previous night. We all decided to watch Inside Out 2 during the day and then get dinner. The movie was decent but not as good as I remember the first one being. I assume it is because I have grown a lot since then and have less appreciation for kid movies. The end was much better than how it started but I still think it was a let down from the first. Dinner afterwards was good. We went to a Japanese restaurant and I ordered some phenomenal sushi. On the fourth, we had a nice hangout at night with the interns.
- **Friday** – I don't remember doing much on Friday. I woke up late and did some work but it was dark before I knew it. Some of us hung out for a bit at night but it was very lowkey. It felt like an actual break day.
- **Saturday** – Rodney, Angy, Ruby, Lydia, and I went to Des Moines. Angy had to go to the bank in Ankeny so we decided to make a small trip out of it. We ended up catching the end of the farmers market and seeing the capitol. After that we were all kind of wiped so we did not do much that night.
- **Sunday** – I have been watching a lot of Reacher on Amazon. It has been an amazing show. I woke up and watched a couple episodes trying to cherish the last day or break. The curiosity group then started working on the outline of our lit review. We then went to Aron's house for dinner. It was nice to finally meet our mentor's family. His wife made some amazing food and bread and his kids were

very energetic. Also his house was extremely nice. I think he might have had the nicest shower I have ever seen in his basement bathroom.

- This morning, we were tasked with brainstorming our posters for our projects. We are supposed to ask a question to each of the other groups so here are my questions:
 - Stem XR – How will you ensure your game is immersive and fun for all types of students who will be playing it? I am sure they all have different interests and some might not be interested in learning a subject through a time travel game.
 - CommHeat – Would you use this app if you were in a location with extreme heat? And how will you make sure people in areas where they do not have easy internet access will be able to reap the benefits of the app and your studies?

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Harrison – Day 31

 [July 3, 2024](#)  [Harrison Brown](#)

- Today is our last day before we have a four-day weekend. I wish I could focus on the fact that we get a break. Before we leave however, I have to worry about our MCA presentations. My presentation is on Machine Learning which is a very exciting yet complicated topic. Luckily my group has been amazing at explaining what is going on and dividing up the slides so that we all understand what we speak about. While I really wanted our group to go first, we are unfortunately going last. Anjali defeated Rodney and I in rock paper scissors and allowed her group to go first. I am still a bit salty that she won because she is a mentor and not an intern, but I guess I have to accept it.
- Tonight, I think the interns and I will be watching the fireworks near Jack Trice stadium. I am excited as it is kind of a marker for the small break and around the halfway point of my time in Ames.



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Harrison – Day 29

 [July 1, 2024](#)  [Harrison Brown](#)

- This weekend was the first weekend we did not have a mandatory activity Saturday morning. I made sure to take full advantage of this by sleeping in. It felt amazing. Later that same night, we made smores in a nearby park. It was a nice night weekend activity and a good contrast to all the morning activities. The vibe of doing something at night was better.
- The rest of the weekend I was either doing work or watching TV. There was not much else I could do since I was feeling a bit sick. Today, I am still feeling a bit sick, and it is not helping that the weather is cold, but I am feeling better than this weekend.
- This morning, all we did was continue to work on our MCA presentation for Wednesday. Every time we work on the project I am reminded how difficult of a topic it is to grasp. I feel as though I

understand the gist of what we do but I find myself often confused. When I ask my fellow group members or my instructor, even though they explain it in a different way, I remain confused. I am hoping it will just click eventually but this is starting to stress me out a bit. If it doesn't click, I am glad however that I have a general overview of the topic and understand some of the code and processes that go into it.



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HCI – Smartphones and Driving Safety Study

 [June 28, 2024](#)  [Harrison Brown](#)

My study would be about comparing how drivers pay attention to the road while using Apple CarPlay vs while using a phone mount in their car. I would use eye tracking to gauge where the driver is looking and the percent of time the driver spends while looking at the screen while in the car.

- My hypothesis would be that drivers pay more attention to the road when using a phone mount and less attention when using Apple CarPlay. I would think this because the Apple CarPlay is a screen that is larger, can have more going on at once, and requires the driver to move their head farther down to see directions.
- This experiment would involve installing eye trackers in participants' cars for a long period of time. Participants would either use Apple CarPlay or a phone mount when driving. The data that would be collected would be the amount of time that the driver spent focusing on the road and the amount of time the driver spent looking at their respective screen. All other places they look would fall into an "other" category. We would then measure the percent of time participants spent looking at the road and at the screen for respective groups and discuss the findings.
- My main independent variables would be whether the driver is using Apple CarPlay or a phone mount. My main dependent variable would be the amount of time looking at the road.
- This experiment would be quasi-experimental because the assignment would not be completely random as I would have to use participants who already have CarPlay or a car mount and I would not specifically be able to make causal claims, just correlation claims.



Vs.



Harrison – Day 26

 June 28, 2024  Harrison Brown

This post will be extremely short as I did not do much except work between yesterday and today.

- Yesterday, we went to Forker to run the EEG on a current ISU student who will be working on the project when we leave. It went well for the most part but seeing that he was not curious on many of the questions, we will have to make some revisions to the study.
- Last night, I went into Des Moines with some of the interns. I got my hair cut extremely short and we got some dinner at a place called Lachele's. Honestly, Des Moines is nicer than I expected. The area where we went did not feel at all city-like, but we saw the capital from the highway. We also got some amazing sorbet on the way back.
- Today, we started our presentation for the deeper dive. It is a bit intimidating knowing that it has to be about a half an hour long and I feel like I am only slightly starting the broad topic of machine learning. I guess we will see the results in less than a week.



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Harrison – Day 25

 June 27, 2024  Harrison Brown

- Today, we had talks from Stephen from 9:30am – 1pm. He started out with a presentation and some coursework on HCI and scientific research methods. This was interesting and I was even inspired to read some books he mentioned. Afterwards, we learned about some of his interesting research projects, about his life and how he got to ISU, and his time in Namibia. He is honestly a very interesting speaker and a great presenter. I definitely enjoyed all parts of his lectures, especially hearing about his time in Zimbabwe.
- This afternoon, the Curiosity EEG project interns are going to Forker to conduct a full study on a current undergrad at ISU. This will be the first time we will be doing the full length study and hooking someone from outside the project up to the EEG.
- Afterwards, some of us are driving to Des Moines to do our hair and have food. Hopefully Rodney gets braids, but he wants to get his hair retwisted. I found someone who can cut my hair nearby, and I have been praying that he does not mess me up. I guess we will see in a couple hours!!



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Harrison – Day 24

 [June 26, 2024](#)  [Harrison Brown](#)

- Yesterday, we made some progress on our lit review for the paper our Curiosity project team will write. Apparently one of the articles I have to read is extremely challenging but I am looking forward to finishing it. The first two pages have taken me a while to read, but I feel like I have a grasp on what is going on so far. We have also made good progress on using and understanding how we can use MATLAB to process and look at our EEG data.
- This morning in our deeper dive, we went in depth on writing code to process data and training a machine learning algorithm for self driving cars. Most of the work was done by Adam but he did a great job explaining the concept and how everything is working. Looking at what the other deeper dive groups have been doing, I can honestly say that I think I chose right. No shade to any of the other groups but I don't think my brain is built for enjoying 3d printing and I wanted to learn something new after unity, which is what the VR deeper dive is doing. Hopefully Adam continues to be an engaging teacher so I enjoy learning more about machine learning.



Thumb up emoticon

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Harrison – Day 23

 June 25, 2024  Harrison Brown

- Not much has happened between yesterday and today.
- We had our last Craft of Research lecture about plagiarism this morning which was followed by a luncheon lecture by a former REU student, Holly Oberbroeckling. She spoke about the project she was working when she was in our shoes at the VRAC in 2014. It was interesting learning about her experience and seeing many similarities between then, and how the program operates ten years later.
- This afternoon, Aron is coming into the VRAC to talk more about our Curiosity project. I think we will be talking about using the MUSE headband and working with MATLAB. Lydia, Sophie, and I are also working on reading articles for the lit review section of our paper, which we are about to start. The fact that we are almost going to start writing has me a bit nervous, but I am excited for it to mark the shift into a more project focused last part of the REU.



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Harrison – Day 22

 June 24, 2024  Harrison Brown

- This weekend was an interesting one. It started off by us not having to go on our hike at ledges. Honestly, I was happy about that. I was actually interested in going to ledges but only if it were later in the afternoon. I was not content with the early wake up time. Waking up to the text saying we weren't going and I had an extra hour to sleep before we all went to brunch was nice. For brunch, we went to Flip'N Jacks Pancake house. I ordered a crepe with bananas and chocolate. It was honestly the worst crepe I have ever had. The edges were crisp and the banana inside wasn't even cut and it was ripe. It was a disappointing experience. The day was redeemed however because we went thrifting, then some of us went to the waterpark. At the thrift store, I found some nice cargo pants and a very new looking shirt. The waterpark was not too crowded and honestly, for six dollars it was completely worth it. It was not a very good waterpark, and we got bored of the slides in about half an hour, but it was a fun experience for the price.
- Sunday, we did not do much. It consisted of mostly work and some lying outside in the sun doing work.
- Today, in our deeper dive on machine learning, we were still having some continued troubles from Friday with importing packages. We spent a good amount of time trying to figure out how and what to import. We then watched part of a lecture by Lex Fridman about AI and self-driving cars which was pretty interesting. After today's session my brain was hurting a bit from all of the new information.



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Harrison – Day 19

 [June 21, 2024](#)  [Harrison Brown](#)

I have not posted my blogs for the past two days so I thought since I woke early today, I should take time to reflect.

- This morning, I woke up early to go to a hot yoga class at 5:30am. I had never done a yoga class before and it much more of a workout and difficulty than I expected. I do think it was very much worth it.
- Last night, we watched Spirited Away for our extra curricular activity. Even though I have watched Spirited Away many times, it had been a while and it is a great movie. I still enjoyed it almost as much as I did my first time watching it. I think Chuchu and I might continue the movie streak and finally see the new Bad Boys movie in theater. I have heard great things.
- Yesterday's luncheon lecture was Dr. Stegemöller. She is our faculty mentor so it was nice to see her lecturing and giving us an insight into her work. Even though I have never had interest in her field of work, the work she is doing was extremely interesting. By the end, she had me wondering if music was indeed a means to improve functionality and body health for people with Parkinsons. I was even wondering about music and its effect on people with other impairments or just general health issues.
- The last thing I have to talk about is my EEG experience yesterday. I was finally hooked up to the EEG and they were able to take usable data from the procedure. Having the EEG cap on my head was uncomfortable. The neck strap felt like a bike helmet but a bit tighter. I don't like things touching my neck in general and this strap was on my neck for about an hour. As far as the experience being the subject and wearing the EEG, there really was not much to it. I rated my curiosity for trivia questions but since it was something we had to do many times while testing the program, I was used to it. The difficult part was washing the gel out of my hair afterwards. It took me a while but I did it and the overall experience was not as bad as I thought it would be. As far as pictures, there is no way I'm posting a picture of me in the cap on my blog, but there is a picture that Sophie took. Maybe it will be on someone else's blog or in the final video. Only thing is it will not be on here.



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Harrison – Day 16

 June 18, 2024  Harrison Brown

First off, I cannot believe it has already been 16 days of this wonderful program. I have been enjoying most of my time here (other than the brief periods of weekend homework) and the people have been wonderful. It was just a bit surprising typing that we were on day 16 when it does not feel like 16 days have passed even though I feel like I know the other interns well.

- Last night, I worked on diving into one of the articles about curiosity. I did this for a craft of research assignment where we had to pick some articles to do an in-depth analysis of. The article I chose is an interesting one about curiosity and its link to reward as well as using curiosity to enhance memory. Our next assignment for craft of research involves speaking about the articles we chose. We have to create a slideshow speaking about the different sections of the paper. This article I chose is somewhat difficult but I cannot wait to go into it in depth. Usually, I do not enjoy reading research papers, but for some reason the more times I read this paper, the more I enjoy it.
- Today, our luncheon lecture was with Dr. Eliot Winer. It was comforting to see a familiar face in the lecture. It felt more like we were learning from him rather than having to become acquainted to someone new. Usually, I feel a bit of pressure to maintain the conversation after the lecturers speak but with Eliot, it felt more calm. I think the overall vibe in the room was better than usual when we were all eating after his lecture. I did really enjoy hearing about his life as well as the valuable lessons he spoke about. It is not hard to notice how he can command a room and while it is intimidating, I appreciate that about him.
- In terms of our curiosity project, our group is almost done working in PsychoPy to perfect the method in which the trivia and data collection work. This has been something we have been working on for a while and today, the progress was amazing. It feels good to see what we had at the beginning of the day versus what we have now. I can't help but admire how amazing our group is and how Aron and Dr. S are both amazing mentors.



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Harrison- Day 15

 June 17, 2024  Harrison Brown

- This weekend was a fun one. It started off with us going to the farmer's market in Ames and running into Stephen and his wife. Even though it was raining while we were at the market it was pretty fun. It was a small market but I enjoyed seeing the variety of sellers in Ames. I even tried some mini chocolates with Jalapeños which were interesting.

- Outside of the REU, I saw my immediate family and some of my cousins. They were visiting Ames for the weekend and it was nice to catch up with them. The only difficult part is that the work is starting to ramp up. It was a bit hard to manage my workload and hanging out with the family.
- Today, we started our Unity coursework. It seems like everything we did in Blender can be done in Unity and it would look better. I am excited to continue putting things into unity and hopefully animating my project.



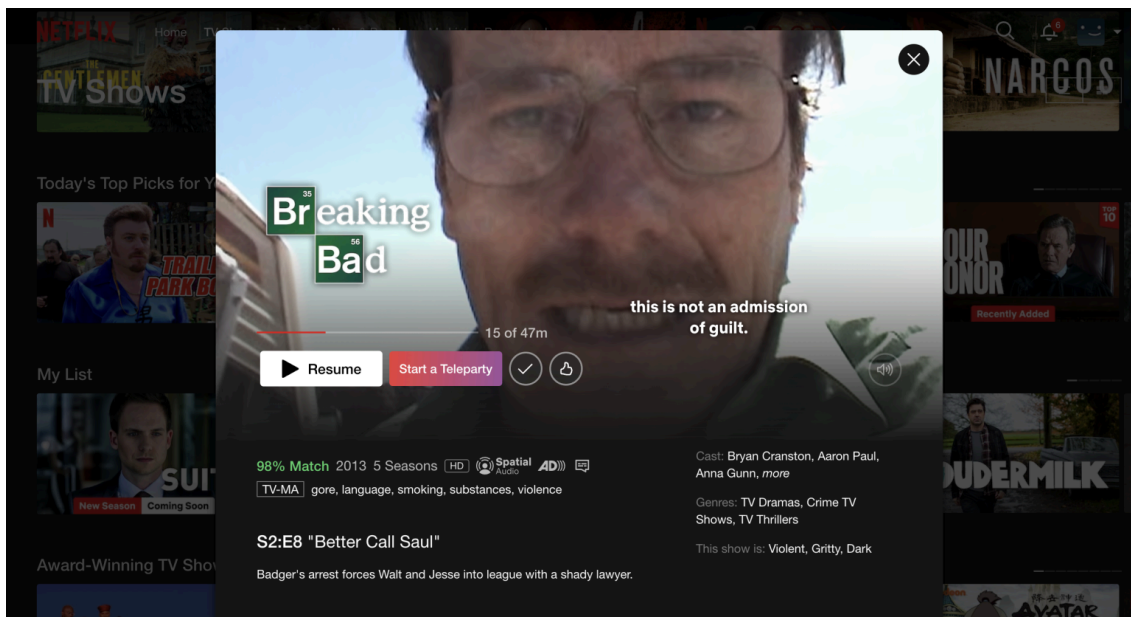
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HCI – What Netflix and Nintendo have done wrong.

 June 15, 2024  [Harrison Brown](#)

There are many products in the world that we enjoy using and some that we may have a distaste for. Below are two products that fit somewhere in the middle for me. I enjoy using these products, yet they have a major room for improvement in their user interface department.

Netflix is a wonderful streaming service yet there is one noticeable flaw on its platform. This flaw is the autoplay feature. If you are browsing for a new show, it is better to skim over the short description to gauge interest. Instead, Netflix's idea was to have a trailer play along with the description whenever the user hovers the mouse over a title for more than a fraction of a second. Because I do not want to see trailers, I find myself avoiding covers of movies and shows that just seem uninteresting without even reading the descriptions. I occasionally will navigate through the shows carefully while trying not to touch any with my mouse. Netflix should remove this autoplay feature immediately and go to using descriptions. Maybe there are some people out there who enjoy autoplay but it would be doable with the ability to toggle a simple switch in settings. Despite this horrendous feature, I do appreciate the fact that users are able to mute the trailers. Netflix is extremely successful and I enjoy some of the shows and movies on Netflix a lot, but getting rid of this feature would allow me to have an enjoyable time on the interface as well. If a description really piqued my interest, I could look the trailer up on youtube. I already do that with movies anyway. If someone actually enjoys the autoplay feature, feel free to reply because I have to understand why and how they deal with it.



I also have beef with Nintendo. The second product I have a hard time dealing with are Nintendo Switch Joy-Cons. When someone is playing a video game on a nintendo switch with the Joy-Cons attached, it allows the user to play on a controller feeling setting with a screen in the middle. This functionality works and I have no complaints. My complaint is when two people are trying to play one game and each person has to use one Joy-Con. One person will get the Joy-Con on which the joystick and buttons are skewed to the left and the other will get the one where they are skewed to the right. Both are uncomfortable and more difficult for use. This is why most users will then buy a pro controller to give the actual gaming console feel if they do not want to use Joy-Cons. My solution for the Joy-Cons is to be able to move and lock either the buttons on the left Joy-Con or the joystick on the right Joy-Con. This slider would allow the Joy-Cons to lock into a comfortable centered position for their individual use or return to normal when using both at once. This would allow both Joy-Cons to have the joystick on the left and the buttons on the right of each Joy-Con so that the user is playing with their controls centered on the Joy-Con. This would allow for easier gameplay and less fighting over who gets the right or left Joy-Con. If you look at the picture below, you can clearly see what I mean.



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Harrison – Day 12

 June 14, 2024  [Harrison Brown](#)

- Today, I am writing this blog from underneath the water tower near the Student Innovation Center. It is a beautiful day outside so some of the interns decided to make the most of it.

- Yesterday we had a game night which was a fun bonding activity for the team. We played Scattegories and Telestrations. I did not expect the time to fly by so fast and hope we have another game night soon.
- Today we are continuing to learn Blender from our class on Wednesday. Blender seems to be confusing most of the interns because we seem to have to learn from YouTube tutorials. I am trying to create a beach scene that I will eventually put into Unity through a future course. So far, I have created the sand through a YouTube tutorial. The sand looked good but it started to make my computer slow down a lot.

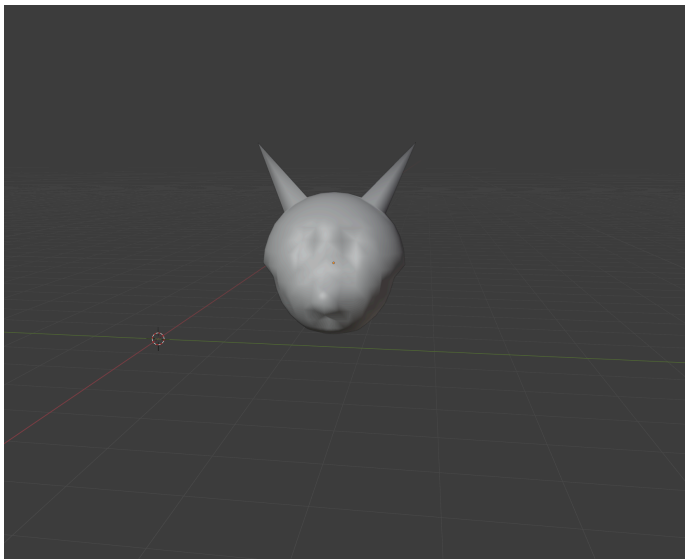


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Harrison – Day 11

 [June 13, 2024](#)  [Harrison Brown](#)

- Yesterday afternoon we had our first course in Blender. The course style was completely different than previous courses. We learned about Blender's interface and some of the various tools we could use. Our task was then to create a cat from a sphere using our limited knowledge of the program. I tried my best to make my image look ok but even with a lot of trial and error I could not figure out how to make a decent cat. I put a picture of my "cat" below because when I become a Blender expert I have to remember how far I have come.
- Today, we had some time in the morning for individual work. I am reading our Mentor's lit review paper for his study. His lit review has honestly been interesting to read because he goes into a lot of detail about previous works and this paper about curiosity is starting to inspire more of my own curiosity about the project. In my free time, I plan on reading many of the interesting articles he sites to go more in depth on some parts of the research I am more unfamiliar with.
- As far as scheduled programming today, we had a talk from Adam, one of the grad students, about HCI. This was actually pretty interesting. I enjoyed learning about the history of computers and learning about some of his experiences from conferences he attended. Shortly afterwards, we had an interesting lecture from Dr. Carmen Gomes about her research. It was interesting because it was completely different than anyone else who came in. Her research was in the field of food science and combining her engineering skills to solve some problems in the food industry. Though this talk was a bit difficult to follow at times because of my limited knowledge of engineering and food science, I enjoyed hearing about her project and the progress she has made.



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Harrison – Day 10

 [June 12, 2024](#)  [Harrison Brown](#)

- Yesterday we finally hooked Sophie up to the EEG. It was an interesting experience. The setup took longer than I expected. We had to manually put gel in each electrode and then connect the electrodes to the device. As this was our first time, Lydia and I might have put too much gel in some of the electrodes. At least we did not mess up too bad and we were able to get ok readings. Cleanup took a lot of time as well. Even with four people cleaning up it took a while because we had to handwash all of the equipment and make sure there was no leftover gel. After seeing Sophie hooked up to the EEG I do not think I ever want to do it. The cap looks uncomfortable and the amount of gel that gets in your hair is more than most people put in a month. However, watching the experiment was interesting, and I look forward to further my knowledge of EEG by continued experiments. Next time though, it is definitely Lydia's turn and if I don't ever have to be hooked up that is what I will choose. If we get to the MUSE headband part, it would be cool to use that as it is much simpler.

- This morning, we had our final course in SolidWorks. We assembled the parts that we built in the previous course. This was a fun process, but it took me a while because I couldn't figure out how to make the pin spin realistically. I am excited to see what is in store for this afternoon's class.



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Harrison – Day 9

 [June 11, 2024](#)  [Harrison Brown](#)

- I missed yesterday's post unfortunately so this will be a quick recap of my time since Friday.
- On Friday, most of the interns watched the movie Memento. This was a movie that Chu-Chu highly recommended and we had been putting off for a while. Honestly, the movie was phenomenal. I had never seen a movie set up as it was, and it was thrilling until the end. I appreciate Chu-Chu for the recommendation.
- Saturday, we had to wake up early to go to a rope course. This rope course was smaller than I expected but as I was on it, it felt higher than I expected. I felt like the team building activities we had to do before the rope course were a bit much. If we just did the rope course however, we would have only been there for thirty minutes so I understand them trying to lengthen the time.
- The most fun part of the weekend was the welcome picnic for all Iowa State REU interns. Our group met the AI research crew. They were all very interesting and it felt like both groups bonded. (We even went to the pool with one of them on Monday.) At the picnic, even though there were a lot of people, we played volleyball, yet no one was particularly good which I think made it more fun.
- Yesterday was my first introduction to SolidWorks. Alex was an amazing teacher and I felt pretty confident in my ability at first. That confidence quickly dwindled however when he gave us our first real task. I found myself asking for help for many functions. I did succeed in building some pieces for a small 3-d printed build but the even the simplest pieces were a bit tough. I was tired from the weekend and felt a bit bad because I felt like I was falling asleep a bit in Alex's afternoon lecture.

- Finally, I am excited for later today. Our mentor, Aron is taking the Curiosity EEG team to see the EEG and how it works. I think the plan is for Sophie to wear the cap while Lydia and I look at the data and learn more about how the EEG works. Hopefully this wakes me up from the long weekend and allows me to get mentally prepared for the week.
- My last thought is that I tried the Dunkin Donuts donut swirl coffee this morning. The guy behind the register told me that the donut swirl coffee was good with raspberry in it. He said it would taste like Jelly donut coffee. It was not good at all. It did help me wake up, but I will never be drinking the donut swirl coffee again.

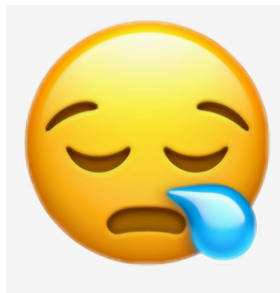


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Harrison – Day 5

 [June 7, 2024](#)  [Harrison Brown](#)

- Yesterday we went to the art walk in Ames as an extracurricular activity. There was not much art on the street but many of the shops along main street were interesting. I had never been in that type of setting before, so it was a fascinating change. All of the interns then went to Buffalo Wild Wings for dinner. It was a cool bonding event and it seemed like everyone enjoyed what they ordered. The Mavericks got destroyed by the Celtics on the TVs in the restaurant. It was surprising to see such a gap in the final score which gives me hope that the Celtics will win the finals.
- This morning it was still very hard to wake up. I went to bed a bit late last night, so I got up late and barely made the bus to the VRAC.
- This is the last day of C++ which I am excited about. Nick has been a wonderful instructor, but I am ready to move on to learning new and interesting topics. It was cool for Nick to join us for lunch, however. I guess I could still say I am hopeful for a fun last C++ afternoon session. (Hopefully the tiredness doesn't kick in too much which is what today's emoji represents).



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Harrison – Day 4



June 6, 2024



Harrison Brown

- Yesterday late afternoon, some of the interns and I went to the state gym pool. It was extremely fun hanging out with them in the hot tub, playing water basketball (at which Ruby is goats), and swimming in the whirlpool. We then went into town and were amazed at the post rain beauty of the sky.
- Last night my roommates and I stayed up until about 1:30am just talking. It was the first time we did so and forged an even deeper bond between the three of us. It is really amazing to see us getting along so well. This did make it slightly difficult to get up this morning.
- This morning, we spent about an hour taking group pictures so we could choose one for the website. We had to all wear the same shirt which most of my fellow interns do not find fashionable. Taking pictures was pretty fun except for when we went onto the roof of the third floor of the innovation center. This was a bit scary as I am afraid of heights.
- Our luncheon speaker, Dr. Wesley Lefferts, was amazing. His story was entertaining to hear, and he even made me a bit interested in biology which I have always found boring and way too confusing. He did an amazing job at faking the New Zealand accent throughout his lecture. We all believed that he was from the other side of the globe until after the presentation, which is when he switched his voice back to his normal accent which was from Oregon (though I am not sure Oregon people even have a distinct accent).
- We are about to have a group meeting for our Curiosity EEG research project. It might be a long meeting but I am excited to see what our mentor, Aron, has in store for us.
- Additionally, I am very sore from the working out I have recently been doing. This is making my gym motivation dwindle. Maybe I will try to go in the morning and wake up at 6 am but it would be even more difficult than waking up at 7:30 which I currently have trouble doing. I guess I am about to see how locked in I can be and how much motivation I have.



This is the phenomenal picture I took of the sky when we were on our way back to the apartment last night.



This is the roof I was scared to be on while we were taking pictures.



This was the beautiful rainbow we saw after the rain when we went to get food after swimming.



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Harrison – Day 3

 June 5, 2024  [Harrison Brown](#)

- I woke up late again this morning after staying up last night to do laundry after watching Game of Thrones last night with some of the other interns. We are trying to finish the show before the end of the program which seems like it will be a challenge. Because of my late wake up, I biked to the VRAC today and it was pretty hot. I felt a bit sweaty when I got there but the VRAC AC was phenomenal. (Though it did start to feel a bit cold 15 minutes after I got there).
- This morning, we started our second day of C++. The challenges are not yet feeling very challenging, but I am sure that will come with more time. After all, we did just start learning the language two days ago. The most challenging assignment so far was the guessing game in which the user inputted guesses to try to guess the random number between 1 and 100.
- After the C++, we had some down time before lunch. I made some good progress on our assignment for the craft of research class. I found some sentences related to the problem statement in an 84-page article that was assigned to our Curiosity EEG team. Afterwards, as we were all tired before lunch, Lydia and I started to play Fireboy & Watergirl which was a fun throwback to playing the game when I was younger. I was definitely better than her, but I am confident she will get better with time. (She is better at C++ than me but that's not as important as cool math games)

- The food in the dining hall was still not very good. I have found that I can make a salad at the salad station, and it is actually not bad.



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Harrison – Day 2

 June 4, 2024  [Harrison Brown](#)

- Today I woke up a bit late because I kept pressing snooze on my alarm. I woke up feeling very sore from a workout I did last night in the room while Rodney was playing video games on the couch right next to me. Great motivation!! (That's sarcastic if you can't tell) (his arm is broken so it is ok, and I wish him a speedy recovery)
- This morning, we did a class on the craft of research which was taught by our wonderful mentor Yvonne. It was interesting to learn about how a problem statement works and how to craft it. Our project team even started crafting our own problem statement, but it still needs a lot of improvement and updating. However, updating is just an important part of the writing process.
- Lastly, before I am writing this, we had a wonderful luncheon lecture by Dr. Jim Oliver. It was interesting to hear about his life journey as he went through more than most professors that I have had the pleasure of speaking with. He worked in the industry, is a professor, and is a successful entrepreneur. He taught us many life lessons like how everyone goes through imposter syndrome or to under promise and over deliver. I find it very useful to listen to people who have been through a lot and have lived life because they made mistakes and have failed so that we can learn and make different mistakes and fail in other ways. If you do not pay attention, it will just result in the same mistakes other people have learned from before you. (Wow I should be quoted for that. Just came up with it on the spot)
- I am looking forward to going to State Gym tonight and getting a workout in after our gym tour. I hope to notice some great progress after the summer. I would provide before and after pictures, but I feel that might be a bit inappropriate for this blog post setting.



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Harrison – Day 1: Monday, June 3rd

 June 3, 2024  [Harrison Brown](#)

- I made a wonderful breakfast consisting of scrambled eggs for my roommates and I. The feedback was overall positive.
- I woke up slightly nervous for the upcoming week of 12 hours of C++ learning.
- After the first session I am feeling more confident in my skills. Even though we have only covered the basics, the teachers were amazing, and the first session felt like it flew by.
- Lunch was still not very good, and I am seriously wondering how I can eat this dining hall food for 10 weeks.



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