



Christopher Kawell

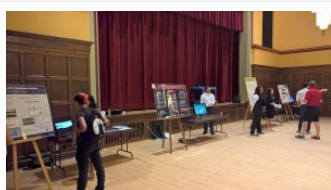


Almost Done



Posted on August 3, 2017 by ckawell

We just finished the poster symposium about an hour and a half ago. It went really well! I think we all agree that our posters (and presentation of our posters) stood out from most of the non-VRAC ones, but we might be biased a little. Still, we all had very good content and understood and enjoyed our research enough to have good conversations with anyone who would stop by. I direct you to Kate's post that she put up today, if you want to see an example of our prototype. The symposium was two hours, but we were packing up and leaving before I knew it. That great big finale of our summer research is done. I can't believe it.



But that aside, I should at least mention all that's happened since I last wrote:

First, I visited the apartment of a couple guys I've gotten to know this summer and their roommate showed me his '70s Porsche that he's been working on! He had never done anything like this, but Top Gear turned him into a gearhead and now he loves it! I can relate a bit.





Also, one of the guys showed me his books that he inherited from his aunt. Everything from the Iliad to Marx! I know most people don't care, but this is the kind of thing that makes me jealous of other people's possessions.



Yesterday a bunch of us went out to eat at +39 Restaurants (yes, that's the name of the place) and then went ice skating at the ISU/Ames Ice Arena. That was the maiden voyage for my new ice skates, and we all had a blast! I wish we had known about there Wednesday special a little earlier in the summer though.





And finally, today we had our last meeting with Jamiahus and Quinn, our project partners. Like I said before, I don't like all these endings, but the meeting went well and I feel they will be able to carry on our work after us. An awesome couple of people who I'm really going to miss.



Jamiahus (left, black shirt) and Quinn (right, red shirt)

Posted in Uncategorized | [Leave a reply](#)

Final Weekend



Posted on July 31, 2017 by ckawell

What a sad title. Every day that goes by has us experiencing for the "last time" something or another. The last group meeting, last trip to Des Moines, last time to see such and such a person. I'm not a big fan of endings.

Now I've gotten that out of the way, let's dive into the weekend.

Friday was a fairly normal workday, for the most part. The main difference was that we all had to come to work dressed up because Paul was going to conduct interviews with each of us, filming our responses to a list of questions (what was your favorite part of the program, what role did you play in your research group, etc.). He had given us the questions days in advance and they were all quite straight forward, so it wasn't bad. I look forward to seeing the compiled video!

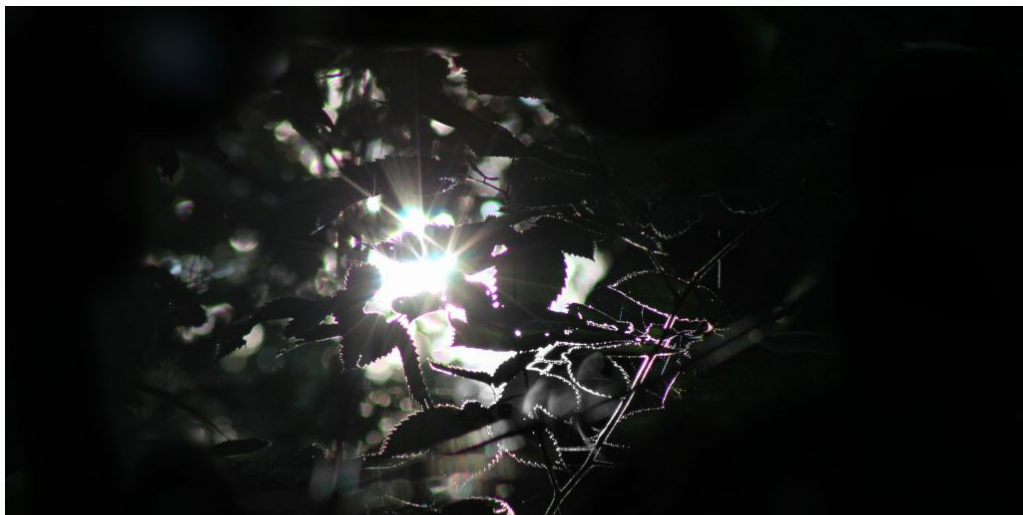


When work ended on Friday, I packed up my backpack, grabbed my sleeping bag, pillow, and camera and headed out of town. When I heard that some of the people at the church I've been going to were planning a camping trip, I jumped at the opportunity. I know Ames isn't very big, but even a town of 30,000 starts to feel far to urban after a couple months. And thus, Friday afternoon found me in my car heading down to Yellow Banks Park in Pleasant Hill for a weekend camping trip.

I won't go into great detail of the trip (if you've been reading this blog you know I'm usually quite minimalist in my writing), but I will say that it was just what I needed! The trip was from Friday afternoon to Saturday evening and consisted of Frisbee, fireside singing, tree climbing, Des Moines river swimming, hiking, and Pacific Rim (one of the stupidest and wonderfulist action movies ever).



The Des Moines river at nightfall.





Because what's camping without some Caber Toss.



Iowa really is quite stunning around lakes and rivers.





We ended the trip with tropical smoothies back in Ames.

Sunday was church, Pokémon Go, and Frisbee golf. I'm trying to get a taste of everything before I leave Iowa. So far I'm doing pretty good!

Posted in Uncategorized | 6 Replies

Almost Done



2

Posted on July 28, 2017 by ckawell

Wow, we are almost done. It's strange to think that these 10 weeks are coming to a close in just a few days. I don't feel like I've been here that long, but that's how it always is, right?

Our TIMELI work is starting to cool down. I expected that the last few days in the VRAC would be a time of chaos as we try to finish the last few things for our research, but it's not looking like it will be that way for my team and I. Instead, most of our work for the summer is done: we interviewed a TIM, nearly completed our research poster, and have a working Axure GUI prototype. We still have a lot of work to do for the research paper, but we have a couple months to complete it and we've made very good progress. Still, I need to not be lured into a false sense of being done. The paper isn't going to write itself, alas.

This weekend I am going camping, so I expect my next blog post to include a lot more non-work-related topics.

Posted in Uncategorized | 2 Replies

GUI Testing



1

Posted on July 26, 2017 by ckawell

My TIMELI team and I just got back from the Iowa Department of Transportation in Ankeny, IA. This was a trip for which we have been planning for a long time.

The purpose of the trip to Iowa DOT was to interview one of the Traffic Incident Managers and run them through a few tests with our user interface to see if we are heading in the right direction. I can't go into great detail on the meetings and tests themselves, but I can say that all in all it felt like a success. Before we interviewed the TIM, we took part in a meeting with some of our TIMELI research team and managers at Iowa DOT. I really enjoyed getting to hear the managers opinions on their current system and how they would like it to improve. An added bonus was that they seemed to like our prototype a good deal and definitely liked what our professor had to say.

On this end of it all, I'm really happy it went well, but I'm mainly glad it's over. My introverted self will now go bury his head in his pillow to recharge.

Posted in Uncategorized | 1 Reply

Time Flies

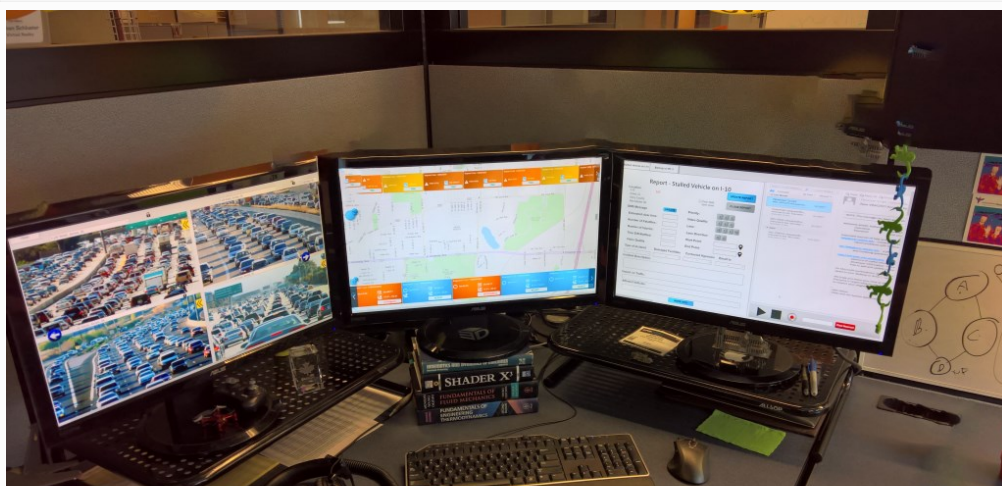


3

Posted on July 24, 2017 by ckawell

As I scroll through my OneDrive photos, I realize just how many things have happened since I last wrote. This may be a rather long post.

First off, our research: the last time I posted, the IRB approval had been delayed, thus keeping us from performing the tests we had desired to complete this summer. However, since then I have felt a lot less stress. Though we have plenty to keep us busy, we no longer have the goal of completing it all this summer. We simply can't now. Instead, we can concentrate on creating our very best prototypes and creating a thorough test to perform later. I think that these goals are very much attainable and we're making good progress.





Our nearly completed Axure prototype.

Now for the none work-related stuffs.

Saturday was kayak day for us, so late that morning found us all piled into an IA State van headed to the Des Moines River in Boone. For most of us, this would be the first time we had ever entered a kayak, and it was perfect for us beginners. The river was calm and steady, with nothing to cause us problems. Of course, being the daring researchers that we are, some of us still managed to push the limits of kayak balance far enough to get drenched! I personally never fell out, but I came very close once or twice. Since there were no rapids to hold our attention, we spent our time in the river testing our kayaking skills, playing group word games, and swimming in the deliciously cool water.



Headed to Boone!





Playing the word game Contact as we drift downstream.



At this point, we successfully attempted standing up in our kayaks.

The next day (Sunday), I was pleasantly surprised with a picnic after church. As a college student, I am particularly attracted to free food, good company, and the outdoors, all of which were in abundance! (Particularly the food. I've rarely ever seen so much in such variety)





After this, I grabbed my tablet and headed out to campus to catch some Pokémon. Pokémon Go is celebrating it's 1 year birthday, so there are some pretty cool in-game bonuses going on right now, including a couple legendaries (Lugia and Articuno, for anyone who cares). I know most of you don't play this game anymore, but it's still a lot more popular than most people realize.

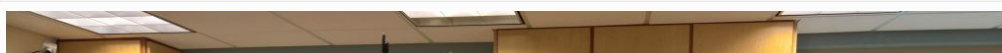


A team of 20 random people gathered together for a Pokémon battle.

And finally, to end our Sunday right, some of us interns watched Star Wars Episode IV. I had forgotten how simultaneously cheesy and wonderful that movie is!

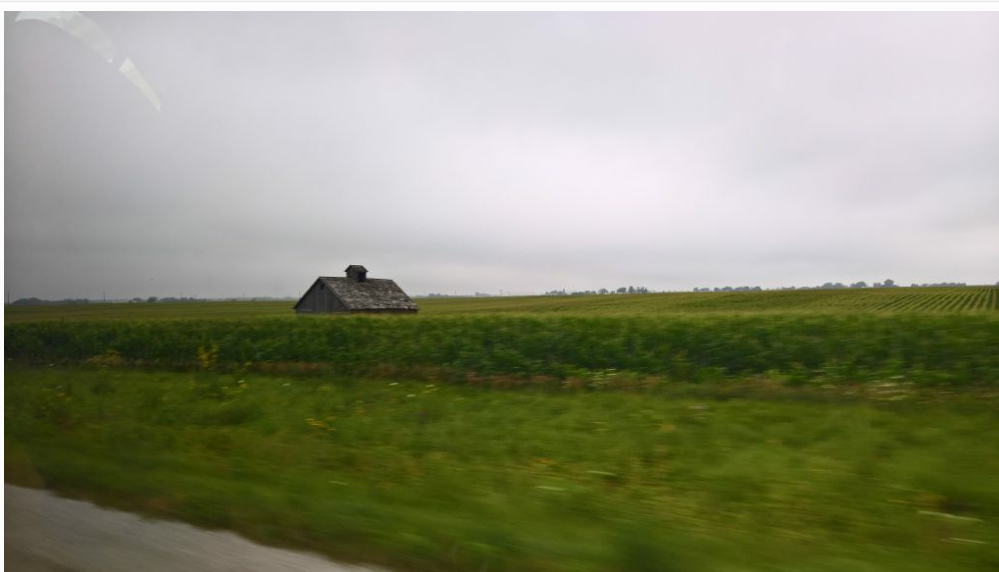


And now, a few random extras:





Early VR headset, or Ghostbusters tech?



Corn.



Free rice crispy I got today!

Wow, I can't believe you read all of that. I guess it was mainly pictures, but still...

Posted in Uncategorized | 3 Replies

IRB Impediments

Posted on July 21, 2017 by ckawell



This week has been nonstop, culminating with finding out that we won't get IRB approval for the tests we want to do until us REU interns leave Iowa. Basically this means we won't be able to collect all the data we want until after this summer. As end-of-the-world

as it felt like at first, it shouldn't set us back too much. We'll still be presenting a poster two weeks from now with a reasonable amount of data and the paper can't be submitted for publishing for a couple months anyway, so this IRB setback is more a complication than a real issue. Oh well.

On a happier note, we're kayaking tomorrow! I've never kayaked before, so I'm excited!

Posted in Uncategorized | Leave a reply

Virtual Reality, Sparks, and Steel



Posted on July 19, 2017 by ckawell

For our luncheon lecture, we had [Dr. Rick Stone](#) whose led an amazing life. Welder, scuba diver, cop, professor, and world traveler (50 different countries). Also, very high energy and a good story teller so needless to say it was an interesting lecture.

His main topic was his research on VR usage for welding training. Currently, teaching someone to weld is very expensive because of all the pricy steel plates one burns through while learning the techniques. However, welding is not an antiquated profession that can afford to die out. Dr. Stone explained that in every corner of the globe, welding is absolutely essential for cities, towns, and villages. With the declining number of people choosing welding as a profession, the industry needs modern training techniques that can make the skill more affordable and less time-consuming to learn. Dr. Stone showed us how 50% VR cuts down on the waste of material in training new welders and how the trainees even learn more quickly and proficiently than with 0% VR. Very cool stuff!

He also shared stories of crime fighting and world travelling, but I can't really do those justice here.

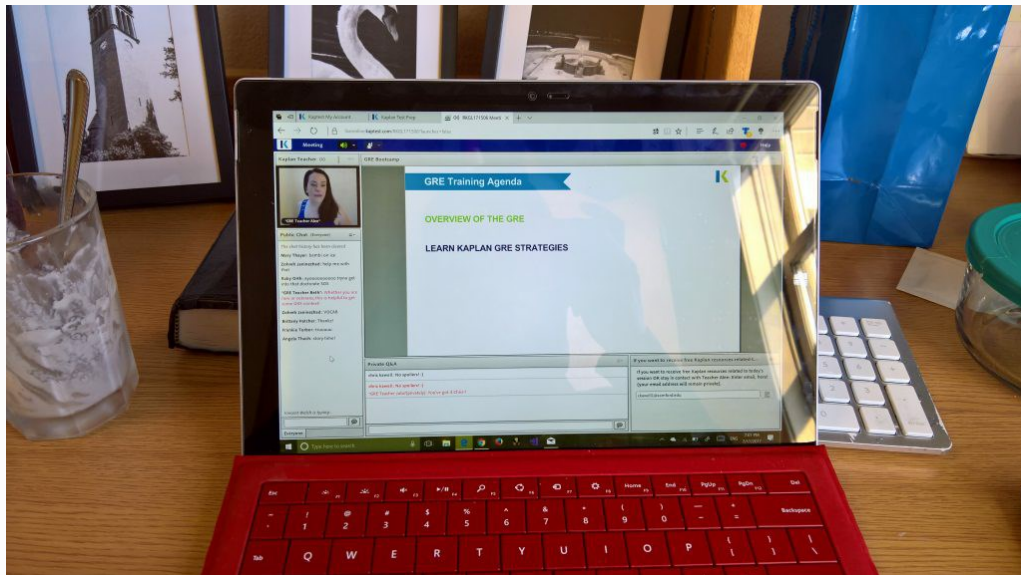
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The GRE



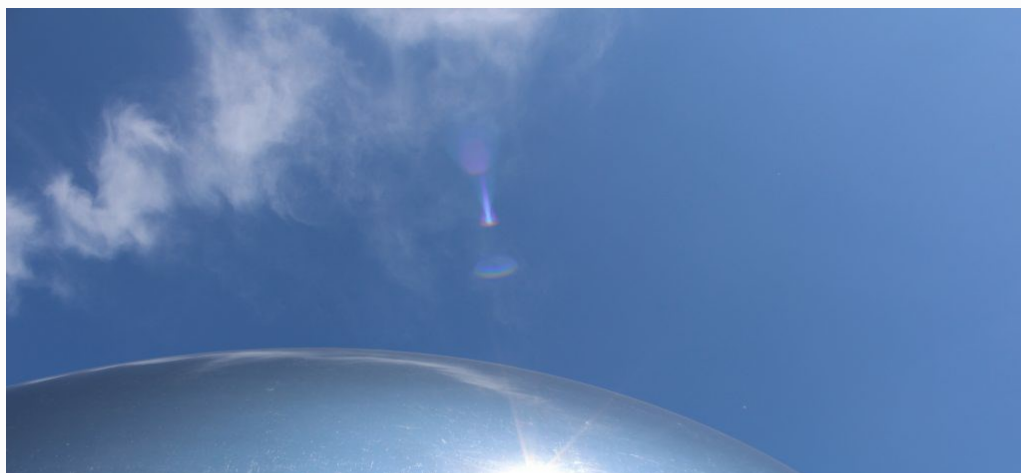
Posted on July 18, 2017 by ckawell

Yesterday I finally got around to studying for the GRE. I'm not particularly worried about it since I've heard from many sources that it's not taken very seriously by many grad programs, but I should probably aim for a good score nonetheless. Shout out to [Kaplan](#) resources! After yesterday's online GRE seminar, I feel pretty good about it. It seems to test reasoning and logic more than math or English skills.



In other news, we presented our latest prototype to our TIMELI team and I feel it went pretty well. They had a lot of comments, but it felt very constructive. Our next step is to plan for how we're going to gather data on how good the UI is compared to their current system. I don't know how much qualitative data we will be able to get, but quantitative is starting to look quite promising.

And kudos to anyone who can figure out what this is (hint, I took the picture this weekend):





Posted in Uncategorized | 9 Replies

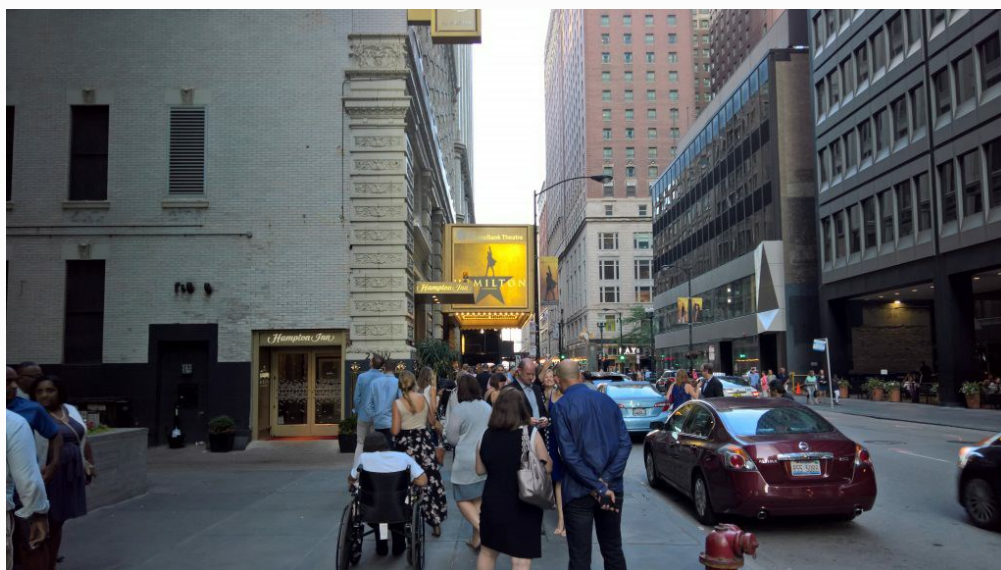
An Eventful Weekend



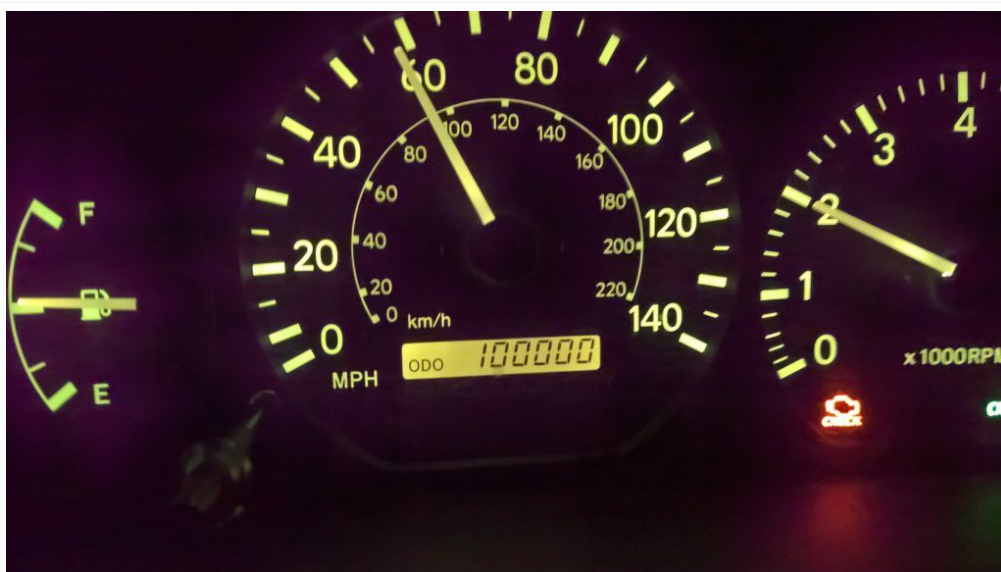
Posted on July 17, 2017 by ckawell

This weekend I drove for 13 hours, visited Chicago, hit 100,000 miles on my car, and saw *Hamilton*. As wonderful as it was, I couldn't afford to be completely absent from our research, so right after *Hamilton* I went up to my guest room in Chicago (I was staying with family), pulled out my laptop, and worked on our paper until after 1:00 AM. I think *Hamilton* gave me the motivation I needed to write late into the night!

Now I'm back at work ready to start week 8. Only three weeks left... yikes.



Hamilton!



I know some won't approve of this risky behavior while driving, but 100,000 doesn't happen every day!

Posted in Uncategorized | 7 Replies

Friday



Posted on July 14, 2017 by ckawell

Time for a list of things:

1. Finish poster draft

2. Finish prototype
3. Finish methodology for testing prototype
4. Finish paper draft (we're a long way from finishing this)

So the good news is all of those involve the word "finish," and not "start." The bad news is all of those need massive work and there are only a few weeks left. But we're good at working as a team, so it'll get done. Currently, we're working on the paper, but I'm thinking we'll move on to the poster and prototype soon, as these deadlines are rapidly approaching.

This post was short, so to make it longer I'll throw in a picture I took of the other side of Iowa. It's not just corn! (It's mainly corn though)



Stone State Park, Sioux City

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Flashback

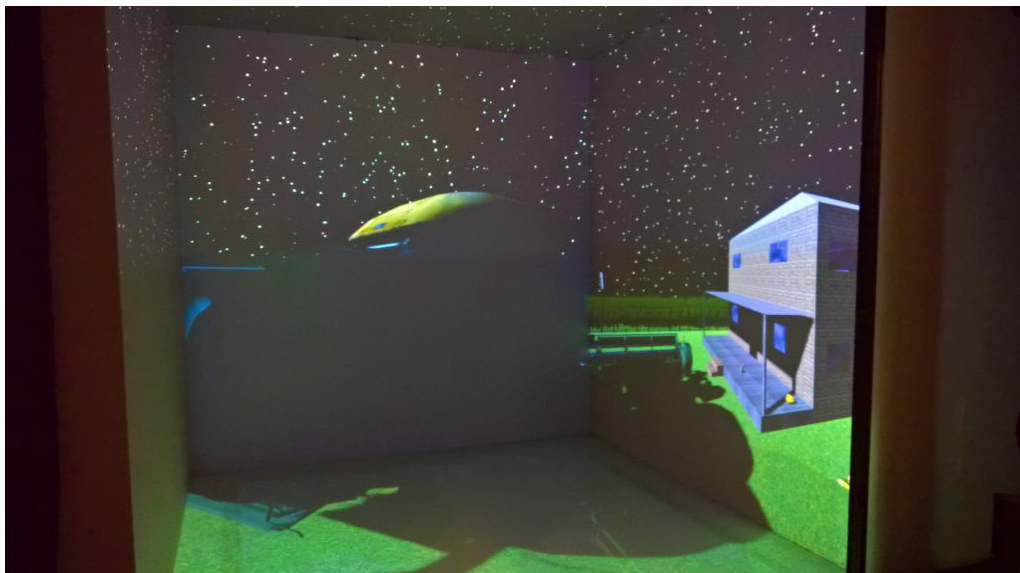


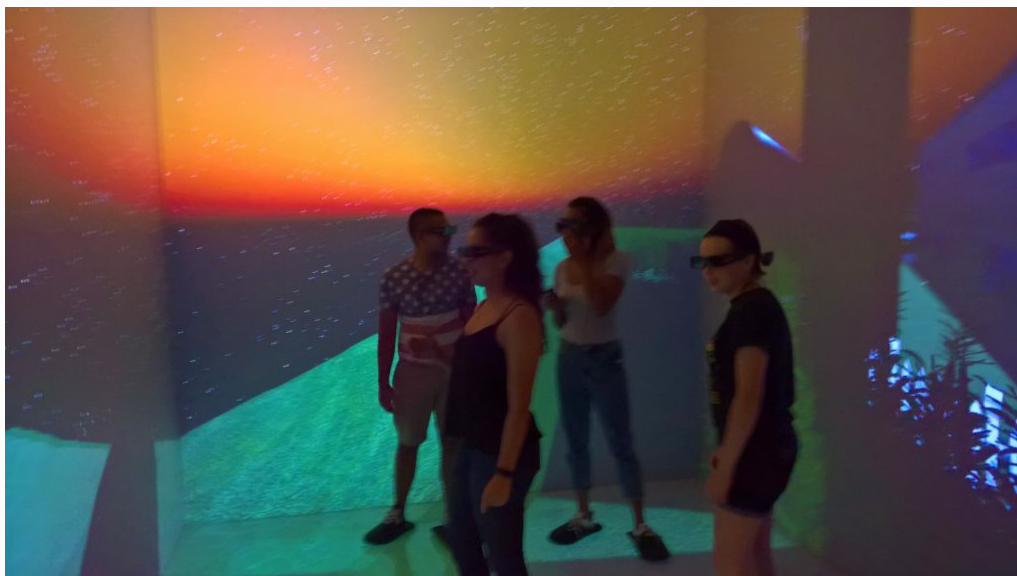
Posted on July 13, 2017 by ckawell

I was scrolling through my OneDrive photos and realized I never talked about our final Major Course Activity (MCA) project. So here it is:

My team was tasked with creating a C6 application that demonstrated the power of shaders (I explain the C6 and shaders in earlier posts). We split our responsibilities up between the four of us and I decided to create a day-night cycle for our game. I had only done this once before and it was in a simplistic tile-based code platform, so doing it in the programming language C# was far more challenging. However, I pulled it off!

The final product? The game starts out at noon, but as the sun moves down towards the horizon a red/yellow tint comes into the sky and stars begin to appear as it gets darker. (and by 'appear' I mean that literally. I set up a big spherical net around the game world that spawns particles of yellow and light blue on its surface as the sun's angle approaches the horizon). By the time the sun set, nearly all the red has left the sky and the otherwise black night sky is dotted with thousands of stars. (In my original version, day sounds of birds fade away and are replaced with crickets, but this didn't translate into the C6 for some reason. Alas). The night remains like this for a few minutes, dark and blue-tinted, until the sun reaches the east, red dawn light begins to fill the sky, and the stars are replaced with a blue, Iowa morning.





I had a lot of fun making this and seeing it come together! I've always loved creating worlds in whatever medium I have, so I plan to do and learn more with this kind of thing in the future.

Posted in Uncategorized | 3 Replies

Ethical Practice



Posted on July 12, 2017 by ckawell

Yesterday we all had a class with Eliot about ethics in the workplace. During the class, Eliot provided us with various thought experiments that required us to make ethical decisions. These thought experiments involved very difficult situations and were designed to leave us with no satisfactory answer. Eliot explained that it's important to think about these kind of things now before we're put on the spot in the workplace and then might be emotionally compromised.

I can't say I agreed with everything that was said in the discussions we had in class, but there were a lot of good comments and I thoroughly enjoyed hearing everyone's opinions and beliefs and getting to learn their thought processes on difficult issues. Classes like these are often exhausting, but I enjoy the topic and am looking forward to our concluding session on Thursday!

As for our TIMELI research, I'm going to have to rewrite our introduction for our paper draft. It shouldn't be too bad, but I was going in slightly the wrong direction and I need to make it more to the point of user interface design. At the same time, more lit review and more prototyping. We can do this!

Posted in Uncategorized | 1 Reply

HCI Interfaces



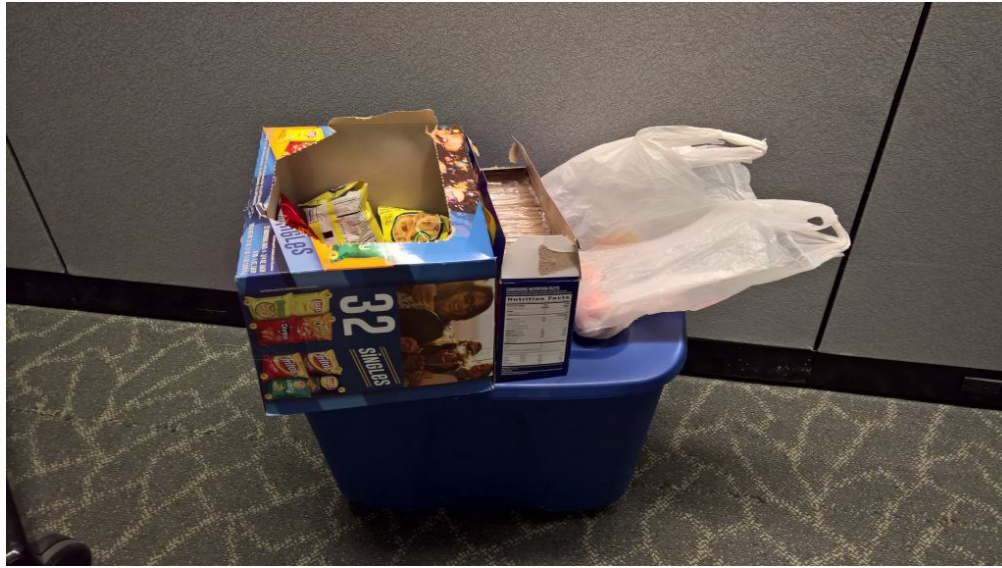
Posted on July 11, 2017 by ckawell

For our Human-Computer Interaction class, we were all asked to find a couple interfaces (of any kind), take a picture of them, and discuss their effectiveness and intuitiveness. So here they are:



The stovetop interface in my apartment on campus

This interface I find very frustrating (and a little dangerous). First off, the dials for the rear burners are no higher up or further back than the dials for the front. The only indication for which is which is an overly complicated image with the word 'rear' or 'front' printed very small near the individual dials. It might sound silly to some, but even now I have a hard time figuring out which dial to use (at least harder than it should be!) and will sometimes choose the wrong one without noticing. Not safe. Also, the "Hot Surface" light is off as long as every singly burner is off, regardless of if any of them are actually still hot. This is silly, dangerous, and seems quite easy to fix.



Our table/container "interface" at the VRAC

My second interface is a little strange, but I chose it to demonstrate just how wide-reaching the term "interface" can be. This interface functions as both a table and container for the REU's snacks in the office (yes, those are a thing. wonderfully). The idea is that it can keep some snacks inside while keeping the remainder off the floor. It works in theory of course, but currently the container is sitting behind me open with the extra snack boxes sitting on the ground nearby, and this is now its usual setup (the above picture was taken a few weeks ago, near the start of the program). I think this goes to show that even the most simple interfaces deal with the same issues you might find in more complex interfaces. We might not pay them much attention, but they're there and we interact with them all the time perhaps even without noticing.

Posted in Uncategorized | [Leave a reply](#)

The Future



Posted on July 11, 2017 by ckawell

Today, we had a roundtable discussion/lecture with Eliot. He's one of the people in charge of this REU program, so we all know him rather well by this point. Thus, it was a rather laid-back and very enjoyable talk.

I enjoyed getting to hear about his past and what eventually led him to the VRAC and what job he has now. Also, I was surprised to hear that he got attracted to teaching in the same way I did: by seeing bad teachers and wanting to do the opposite.

I entered college without any desire to teach or be in a leadership role of any kind. As an extreme introvert with an extrovert twin brother, I always preferred to follow the lead of others. However, when I got to college I quickly learned to enjoy making decisions on issues greater than myself and I came to appreciate the intricacies of teaching and guiding others. I also began to notice many current issues in modern school systems that I had not been exposed to earlier that could be fixed. Not that I'm particularly amazing at it, but after experiencing a few quite bad classes I really love the idea of becoming a teacher and learning from their mistakes (Not to sound negative at all! Most of my teachers have been amazing and I've learned from them extensively on how to teach effectively).

I won't say with complete confidence that grad school or fulltime professorship is in my future, but I definitely like the idea and I like it more due to this REU.

Posted in Uncategorized | [Leave a reply](#)

Soo, fire



Posted on July 6, 2017 by ckawell

I am currently sitting on the pavement outside Howe Hall writing this. This isn't my customary location of course, but the fire alarm went off in the building some ten minutes ago and I've learned from past experience to always grab any material I need for my current project before leaving the building.

As for our TIMEI project, things are starting to become overwhelming. I know I ended my last post on a positive note, but I've spent so much time today just trying to figure out what needs to get done first. Posters, publications, prototypes are all crying for my attention and I'm not sure which takes priority over which. Kate suggested that we spend the day working on our lit review and introduction paragraph to our paper so I'm hoping we get that done today.

Ok, they're letting us back in now. Yay! back to work.

Posted in Uncategorized | [1 Reply](#)

I spent the Fourth purposefully avoiding any work related activities. This left me with the inevitable question: what to do on the 4th of July while in Ames, IA? I decided to just wing it and see what would happen.

I began the day with sleeping in. After I got up, I was about to ride my bike to the 4th of July parade in Ames when I got wind of breakfast burritos and pancakes being made by Sofia and Devi. I chose the food instead of the parade, and I chose well. The burritos and pancakes were amazing and a great way to start Independence Day (thanks guys!).

After brunch, some of us played a really intense game of Settlers of Catan and then I returned to my room and settled down for three hours to watch the director's cut of *1776* (the movie version of the Broadway musical), which is a 4th of July tradition for my family.



Probably my favorite movie of all time. Just sayin'

Afterwards, I rode into the old part of town just in time to see the last couple minutes of a dog show in which contestants (the dogs) jumped into a large pool while judges analyzed their distance and height. I wandered the town at my leisure (remember, no work activities of any kind!), looked at the patriotic paraphernalia, and played on a public piano in town. I didn't have any music with me, but I played Fur Elise, some patriotic tunes, and then freestyled as best I could.





Finally, it was time to head down to Des Moines for the city fireworks. Masashi, Devi, Sofia, Brittney, Emanuel, and I piled into my car and got down to the lake just in time for the show. It was a longer show than I'm used to, but we all really enjoyed it! To make matters even better, we had parked very near the exit of the park, so we were able to leave long before most people. I got back to my apartment at around 11:30, very tired, but having thoroughly enjoyed my Independence Day!





Posted in Uncategorized | 2 Replies

A meeting on our free day



Posted on July 5, 2017 by ckawell

We had Monday and Tuesday off for the 4th of July, but nine on Monday still found my team and I going to a meeting for our research. We had scheduled the meeting before we knew that we would get the day off, but at least it got us up and about, and the meeting turned out to be a success.

The purpose of this was to meet with a couple of people on our TIMELI crew who are in charge of implementing the user interface into the project. One was a programmer and the other a UX expert, so they were able to give us a lot of feedback for both the technical and rational aspects of our UI prototype. The meeting started with them showing us their prototype. They've been concentrating on implementing machine learning into the TIM's workload, so their prototype was understandably different from ours. However, I noticed many similarities and I doubt any of the differences between the two are anything problematic. In short, we like theirs and they like ours, so all that remains is to fine-tune the design, back up our rationale for the design, and integrate the two prototypes into one. Things are starting to come together.

Posted in Uncategorized | Leave a reply

Code binging



Posted on June 30, 2017 by ckawell

For the past couple days I have devoted much of my time to designing a dynamic night-day cycle for our Shaders class. In a little over a week, I along with the other interns in the class will be presenting our C6 application. The application will concentrate on the power of shaders and what they can do, but we want our virtual environment to be very detailed. Thus, a dynamic night-day cycle. I've spent a few hours both at the VRAC and in my apartment writing the script, and now it works! Complete with stars and an ambient soundtrack that changes with time of day, too. However, I am experiencing difficulties when I put it in a scene with complex shaders, so it's still got a ways to go. More on that to come!

Posted in Uncategorized | Leave a reply

Meetings

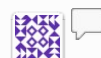


Posted on June 28, 2017 by ckawell

As the title might suggest, this post will not be very entertaining. Yesterday was a lot of meetings. And I mean a lot, something like 7 hours worth. But all in all, I'd say they were successful. I won't bore you with the details, but after yesterday I feel that our research team has a better understanding of what we're doing and how we're going to accomplish it. Basically, we were told to be as creative as possible while brainstorming UI designs, which is definitely something I wanted to hear. And now that we're implementing [the agile methodology](#) for our prototype design, I expect we will start to see results very quickly. I'll keep you posted!

Posted in Uncategorized | Leave a reply

The C6



Posted on June 27, 2017 by ckawell

Yesterday afternoon for our shaders class we got to put a couple simple applications into the C6! I didn't think this would be so simple, but with just a couple modifications to the code and scene, our Unity project was showing up on the giant walls of the C6 VR room. This has got to be one of the coolest things I have done all summer. Not that the virtual environments were anything complex. They were made up of nothing more than a few primitive shapes with textures and shaders, but it was really amazing that a project can be accessed through a VR Cave after being created only a few minutes before. Our assignment for the class is to build a Unity application that takes advantage of the shader techniques that we've learned thus far, so we will get to have more experience with programming for the VR Cave.

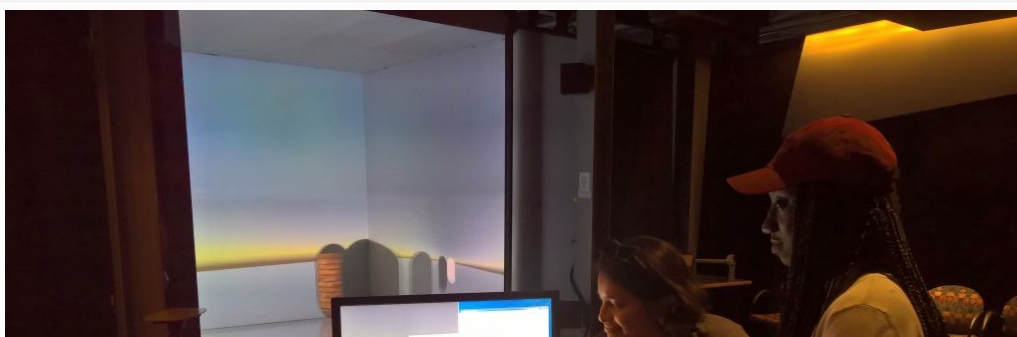
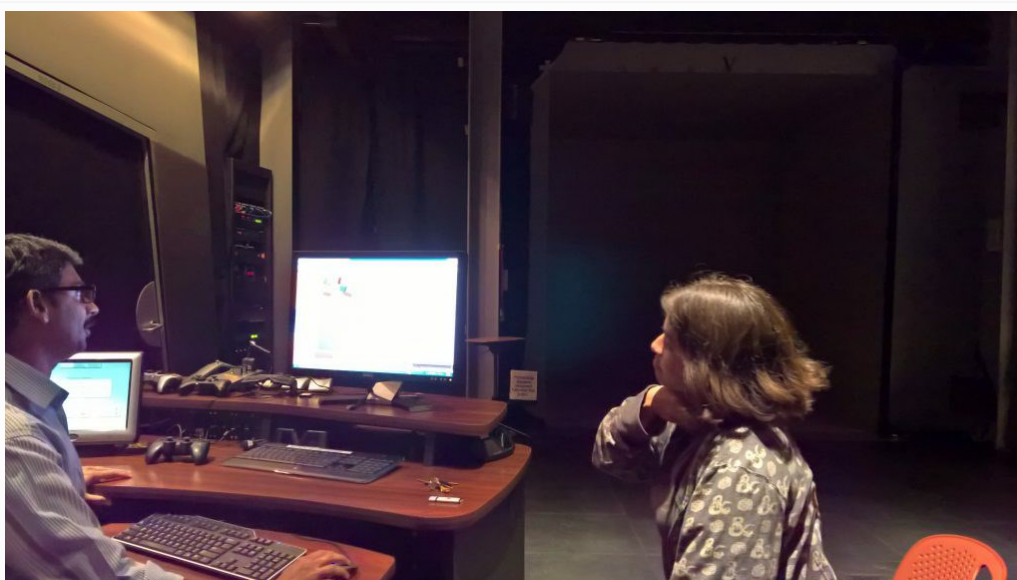




The C6's 48 computers powering up.



Inside the C6. The Cave is calibrated for the wearer of the main 3d glasses, in this case Devi.





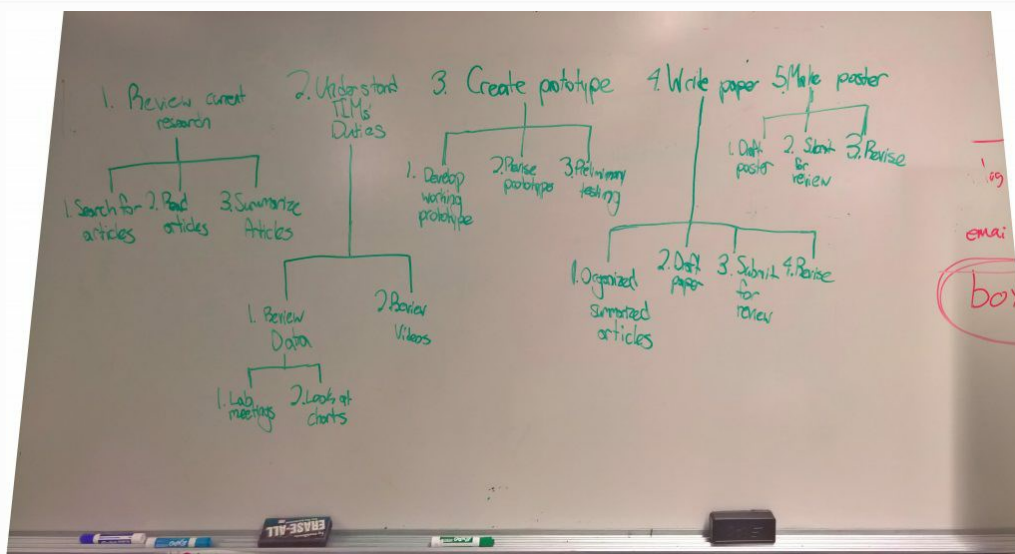
After this class, Kate, Sofia, and I spent some extra time in the office preparing a couple UI prototypes for our TIMELI team. We showed our team the prototypes this morning and they really seemed to like our progress. Things are really starting to ramp up, but I feel we're going in the right direction and I think our product at the end of all this will be something to be proud of!

Posted in Uncategorized | Leave a reply

HCI Project Analysis

Posted on June 26, 2017 by ckawell

We divided our project into 5 stages: Review Current Research, Understand TIM's Duties, Create Prototypes, Write Paper, Make Poster. These we split into smaller steps, such as drafting and testing. I approached it by thinking logically about each of the 5 steps. Basically, "How could I accomplish this step?"



Posted in Uncategorized | Leave a reply

Shaders and UIs

Posted on June 26, 2017 by ckawell

Last night I spent a few hours trying to catch up on my Deeper Dives class work (see prior post), which is on manually creating shaders in Unity. When one creates a shader, one is basically stating how light is supposed to appear on the objects in the scene. But in reality, coding a shader is far from intuitive. A properly designed shader can do everything from making a glossy or shiny surface, to making an object look made out of textured brick or stone after rain. It requires being comfortable with calc and having a fair grasp on physics, so I can't say I understood everything we were coding. When I went to bed last night I wasn't sure I understood it at all, but it turned out that I had studied a little more material than we had covered, and so today in class went rather well (Shout out to Devi for giving me notes to study!). I'm still vague on certain finer points, but I think I have a good foundation now. Supposedly more than most game developers!

As for our UI, we have a lot of ground to cover today. We need two working prototypes of potential user interfaces by tomorrow morning at nine. Kate and Sofia have been working on these while I was gone and what I've seen looks good, but we have a lot to do and a little time to do it.

Though I wasn't able to help with the UI this weekend, I did find some helpful information on multi-monitor setups and their usability. Currently the TIMs (Traffic Incident Managers) have three monitors and we were considering changing that to one large, wide screen in order to get rid of the bezels (the physical frame of a screen). However, what I found in my research was that those bezels are potentially very useful for keeping work organized/divided into manageable groups. Bezels on monitors act like walls in a house, keeping everything ordered and in their right places. I guess sometimes predefined limitations are a blessing, not a curse!

Posted in Uncategorized | Leave a reply

Wow what a weekend

Posted on June 25, 2017 by ckawell

You know that feeling when you find yourself hundreds of miles from where you were just a few hours ago and your not completely sure how it happened? I didn't either, until Friday night which found me at a friend's apartment in Birmingham AL, celebrating my

brother's engagement. Birmingham, a place I didn't expect to return to for a couple more months.

I've known about the upcoming engagement for a long time. Of course I have, seeing as he's my twin brother. I just didn't know that I was going to be able to be there. Living nearly one thousand miles away tends to make quick visits difficult. And as the date got closer and closer, I watched as the ticket prices from Des Moines to Birmingham crept up and up from outside-my-budget to WAY-outside-my-budget. But then, just three days before my brother's proposal, everything clicked into place with miraculous perfection and I found myself Friday morning on the plane home.

I had a great time being home again and I'm so thankful I got to be there for such a big event! I'm back in Ames now, and it all seems like a dream and a long time ago.



Vacation is over though. Friday was a big day for both my research team and my crash course class. Of course I missed all of it, so now I have to try and catch up as much as possible. I did some research while on the plane and I've spent a few hours reviewing the class material I have, but I need to do more. I'll try to include a lot more technical information in the next post.

Posted in Uncategorized | 2 Replies

Dancing Snowmen

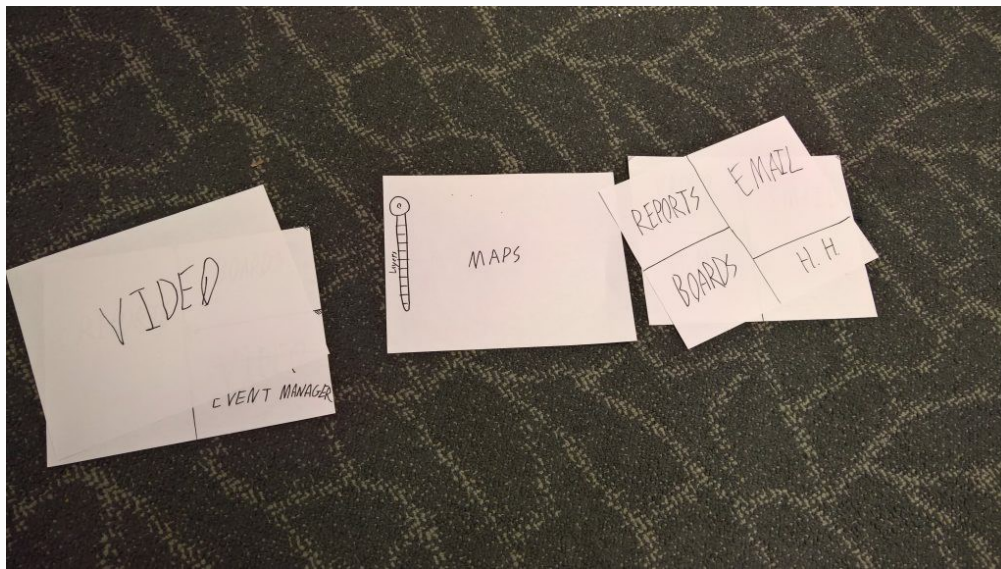


Posted on June 22, 2017 by ckawell

Yesterday we did a lot in the Unity game engine (including a dancing snowman, hence the title). Unity is not the easiest of programs to learn due to the large number of aspects that go into game design. Shading, coding, texturing, physics, design, and even calculus play key roles in creating a game in Unity, and thus there was a lot of head banging during the Unity courses. I get the impression that people have mixed feeling towards Unity after our lessons, but most of us will have to use it even more during our stay in Ames, so I'll be interested to see how that goes. I for one enjoy the game engine, but that's partly due to the fact that I've used it before.

After we finished our last Unity course, we all chose a subject in which we would like a deeper understanding. I chose shaders in Unity, mostly because it's an area I know little about and find interesting, but also because we get to put our projects into [the C6](#) at the end of the summer!

As for our research, rapid prototyping has proven to be far less rapid than I expected. I expected that I would have quite a few different user interface prototypes by now, but I only have two. Basically, I like them and can't think of how to make them better. Of course I'm sure they could both use a lot of work, but I can't think of what that is. In the meantime I've been trying to watch a lot more recordings of Traffic Incident Managers' screens to give me a more intuitive understanding of their current processes.



My (extremely detailed) UI models designed for three monitors.

Posted in Uncategorized | 1 Reply

User Interfaces



Posted on June 21, 2017 by ckawell

After weeks of lit review, meetings, and TIMELI orientation, we are finally starting to prototype our user interface. The plan is as follows: each one of us (Kate, Sofia, and I) will each sketch a large quantity of UI prototypes. The first of these prototypes will be simply to get us thinking. But as we continue to remodel and study the TIM processes, theoretically our prototypes will get better and more intuitive. After a few days of this rapid prototyping, all three of us will get back together and compare what we have in our individual prototypes. At this point we will be able to start narrowing down our ideas to a select few. I'm not completely sure what the next step will be after that, but brainstorming is always fun and I'm happy to have a clear mission right now.

Outside of work life, we all celebrated Father's Day without any fathers. This was disappointing of course, but we ate lasagna (thanks Emma!), watched Wonder Woman (a fathers day classic of course), and had Austin play honorary father for the day, so it turned out alright!



Lasagna!

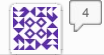


Austin as dad

I'm also getting the hang of bouldering. I can't say I'm very good at it yet, but I'm definitely noticing a steady trend of getting better and I can do a few routes on the bouldering wall that used to seem impossible. Finally a gym exercise that's fun!

Posted in Uncategorized | [Leave a reply](#)

A Lot of Stuff. No, Really



Posted on June 18, 2017 by ckawell

Ok so I think it's high time I gave an update. My last time was Friday I think and it was a post about Thursday, so I have a lot of catching up to do!

On Friday, my research team and I went down to Des Moines to check out Iowa DOT's main facilities (Iowa's Department of Transportation). Since we're trying to make their system better, we figured we should probably witness firsthand what their *current* system looks like. Upon arriving, we were taken through a back door of the building (which is also a DMV) and down some steps into a large room with nine massive screens on one wall. Each screen was large enough to hold eight different traffic video feeds at one time comfortably, and in front of these sat four Traffic Incident Managers (TIMs). As big and high tech as it was, it was hard to believe that these four people were able to monitor all traffic incidents in all of Iowa.

After we had our tour and talked to the people working there, we headed back to Ames for another lesson in SolidWorks. I know we don't ALL enjoy CAD modeling (and I'm not entirely sold on it myself), but I can say that we seem to have learned it very quickly! Our teacher was very surprised at our willingness to learn and our abilities after just two days of SolidWorks. Next up to learn: Unity.

After work, I went to Bike World, which sells you-guessed-it and everything that you might need for them. Thanks to them, I have a water bottle on my bike and a chain that doesn't squeak!



Friday ended with Sushi, Natalie, and I climbing on a roof, climbing on a train track, sorta almost getting hit by a train, definitely getting hit by ants, and storm-chasing. Pretty uneventful. Here's a selection of the lightning pics I've gotten so far here in Ames:





Saturday started early at the farmers market. It was a small market, but they had everything from Amish baskets and chicken pillows, to vegetables and tacos (which were quite close to true Mexican style, according to Alfredo). However, one of the vendors told me that Des Moines has a much bigger market, supposedly the second largest in the country! I think I'll head down there at some point to

check it out.



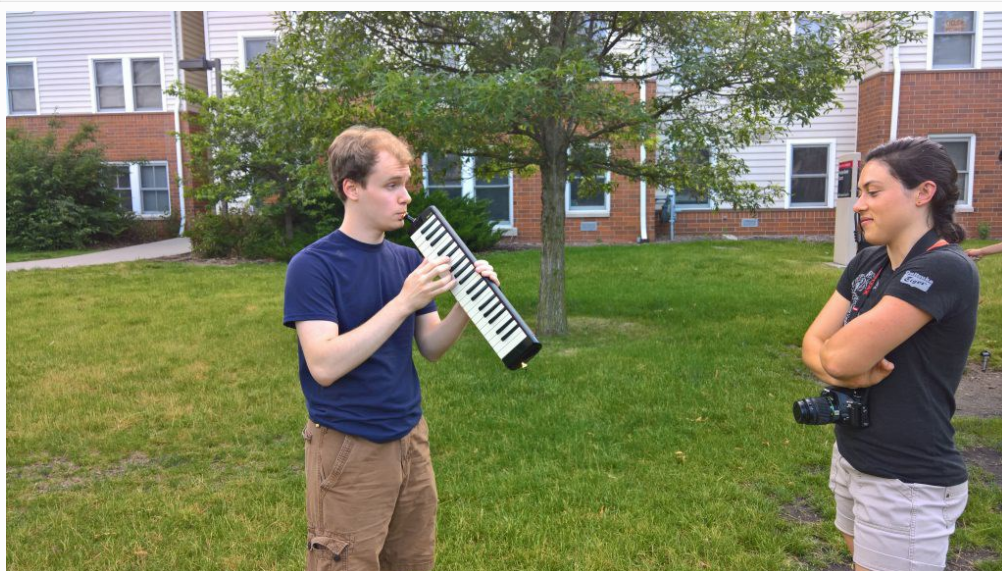
Chicken Pillows!





And of course we stopped in at the music store.

We ended Saturday with a big burger party, which everyone came too! Masashi made the burgers (thanks Sushi!), I made the corn salad, and everyone chipped in a few necessities to make our picnic a blast! We even convinced a now friend of ours to come over and perform on his Melodica (don't worry; we paid him in burgers).



Sam, with his melodica.



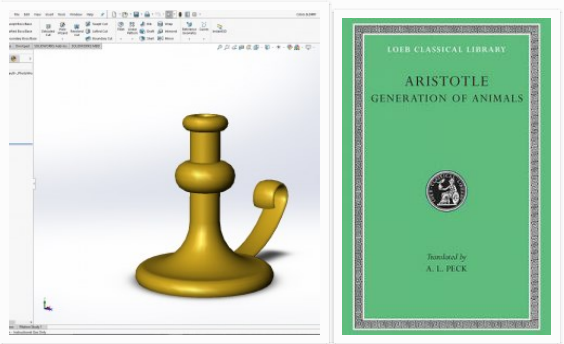
Today, I have dabbled. I've read, worked on a new piano piece, played Pokemon Go, Civ 6, Minecraft... Also, I've eaten three bowls of ice cream. I knew buying a gallon was a bad idea...

Posted in Uncategorized | 4 Replies

Aristotle's Physics



Posted on June 15, 2017 by ckawell



The title of this post is a little weird, but it makes sense. ish. Just bare with me.

At work we focused on SolidWorks nearly the whole time. SolidWorks is a CAD (Computer-Aided Design) software, which is used for creating virtual prototypes of physical objects. Unlike in Maya which is free-form modeling, SolidWorks requires that everything you make be physically possible. For this reason, our teacher (a PhD student) considered it to be almost more of a philosophy than a science. (Get the title now? physical design/philosophy = Aristotle's *Physics*? nevermind)

I thought I was going to hate CAD designing after free-form modeling, but I'm actually starting to like it! I get a little frustrated with the lack of exactness in Maya/Blender and the "free-form"-ness causes me to get sloppy and cut corners, but SolidWorks forces me to do everything correctly. Nothing good will come out of SolidWorks if you don't take the time to do it correctly.

Posted in Uncategorized | Leave a reply

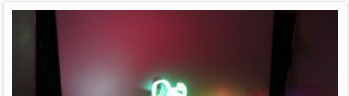
Traffic and Pokémon



Posted on June 14, 2017 by ckawell

Yesterday was quite action packed. Ok, most people probably don't think of watching over an hour of a Traffic Incident Manager's monitor as action packed, but there was enough going on to make me exhausted afterwards. This TIM, whose computer monitors other members of our team recorded, had over ten windows open at times and was constantly doing things. I won't go into great detail, but the conclusion of our video viewing session was me feeling rather apprehensive about this whole constructing UIs business. It's far more complex than I expected! I guess we'll just have to mount this one small step at a time.

After work, our whole intern group got together for some light painting. I enjoy creating most any type of art, and even though many of our attempts at light painting were lacking in artistic perfection, it was still a lot of fun!





Here's me running away from a massive T-Rex



After light painting, I spent, well... a considerable time Pokémon hunting on campus. My brother notified me of a massive Pokémon Go event happening this week due to the game's one year anniversary. Well, I misunderstood him and thought it was only for a day, so I spent FAR more time than necessary trying to catch some Pokémon I didn't yet have. Oh well. There are worse things in life I guess. On the bright side the sun stays up until around 9:00 here, so I didn't find myself in any dark, sketchy situations.

Posted in Uncategorized | [Leave a reply](#)

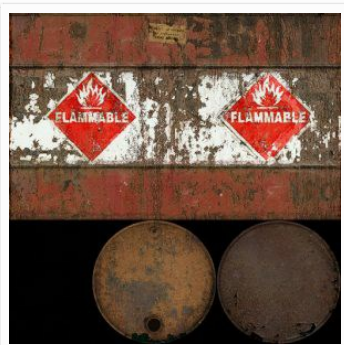
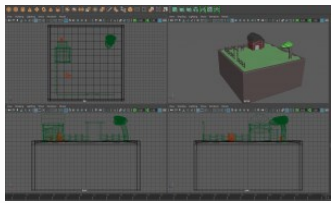
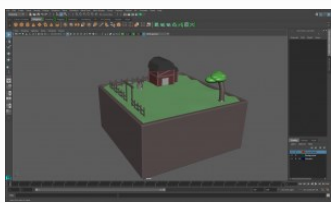
Maya, Maya, Maya



Posted on June 13, 2017 by ckawell

We started this week off with basically a full day of Autodesk Maya training. We had roughly 3 to 4 hours of Maya class time, but we didn't have much else scheduled for the rest of the day, so all of us dedicated most of our time after our class sessions to experimenting with Maya. Maya is a 3D animation, modeling, simulation, and rendering software (to quote their website) which would usually be almost \$1500 dollars annually for a subscription. We get it free at the VRAC thankfully! (not to mention a three year student subscription on my pc)

For our classes, we were introduced to the basic functionality of Maya and then were encouraged to get creative with a few basic models. After just a few hours of tinkering though, all of our models looked anything but basic! What started out as a simple farm scene had morphed into townhouses, castles, and zeppelins. By the end of the day, we had all blown away our teacher by how quickly we had taken to the new piece of software. I think it's because 3D modeling is so fun, honestly. With Maya, anyone with a just shallow understanding of its tools and a small spark of creativity can create basically anything. (and also after a week of learning C++, Maya almost felt simple!)



With Maya, this boring image can become...





...this life-like oil drum!

Posted in Uncategorized | 2 Replies

A Weekend to Remember



Posted on June 12, 2017 by ckawell

Saturday

On Saturday, we all got up a little earlier than usual to go to Iowa Valley Adventure Challenge Course, a team-building high ropes course in Marshalltown IA a few minutes outside Ames. We spent most of the day there, doing team building and confidence growing challenges and had a blast! I won't go into great depth about it in this blog though, because I'm sure my fellow researchers are rehashing much of the same experience in their blogs (so make sure to check those out!). I'll just say that I really enjoyed it, and I think we all found ourselves overcoming challenges we shortly before thought impossible!



Thanks to Natalie Blodgett for the awesome photos!



Sunday

Sunday was a lot less crazy (well, it ended with me eating a pancake with chicken, cookies, and ghost pepper salsa, but apart from that, not crazy). I spent most of the afternoon reading at a park. It's so hot up here, but the humidity's not so bad yet, so I was able to sit for a few hours in the shade with minimal discomfort.

I then rounded off the day with a wonderful sunset! (oh yeah, and the ghost pepper pancake, but I think a sunset is a slightly better way to end a blog post)



Posted in Uncategorized | Leave a reply

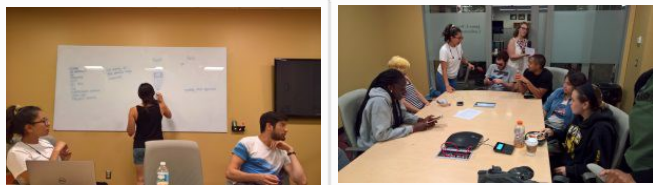
User Interfaces and a new sport



Posted on June 9, 2017 by ckawell

Yesterday (6/8) was very research intensive. Some members in our research team gave us undergrads a bunch of research papers to flip through, so we spent most of the day learning about Computer Human Interaction and user interface (UI) design. I found the subject of how to properly format a UI very fascinating and the articles sparked a couple ideas of my own that I hope to implement in our project. UI design is heavy in psychology, a subject which I have wanted to study but have never had the time for, so I'm really looking forward to our more in-depth research later this summer.

After work, we spent an awful lot of time discussing/debating/arguing over what our REU t-shirts will look like. I think if we invest as much blood, sweat, and tears into our research as we did into t-shirt design, we should all be quite successful!



(Oh and for anyone reading this from outside the VRAC at IA State, my research team is Celia Loya and Katherine Atwell. That might make our posts a little more intelligible)

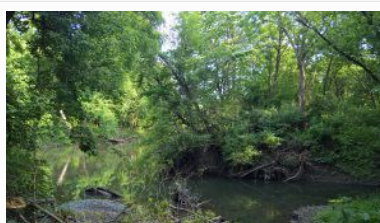
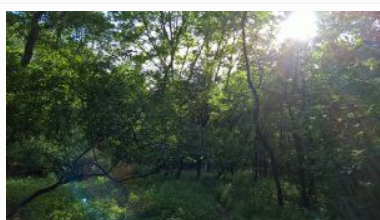
Posted in Uncategorized | [Leave a reply](#)

The Woods of Ames



Posted on June 8, 2017 by ckawell

After work yesterday, I intended to go to the gym. However, I forgot my keys and wallet. Turns out, there's not much one can do without them, apart from exploring. Since I was now locked out of my room with this as my only option, I hopped on my bike and rode aimlessly out of Freddy. I ended up finding a really cool forest path, small and uneven, but fun to explore.



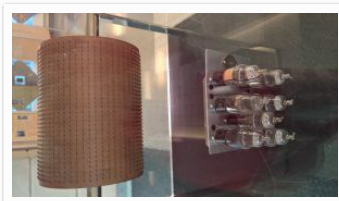
I had no idea there was so much wooded area here! It reminded me of home. The trail got so difficult though, I had to continue on foot

for the last few minutes before returning to my bike and heading back to campus.

I don't know where I found the energy (I guess having absolutely nothing else to do helps), but once back I proceeded to explore the campus. My first destination was the Durham Center for Computation and Communication, because the replica of the Atanasoff–Berry computer (the first automatic electronic digital computer) was supposedly located there. No luck though! The replica is currently on loan in California. It was still cool to see the display room and vacuum tubes, and ride by Physics Hall, the AB Computer's birthplace.



Physics Hall, the birthplace of the AB Computer

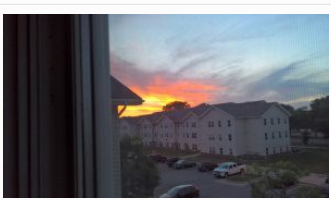


Those glass things are vacuum tubes and I think the big cylinder is a memory drum

After a little more exploring, I headed back to Freddy and one of my roommates was there to let me in, in time to see the sunset from my window! Sure it was a slow day at the VRAC, but it ended well!



Just something I found in my travels



Ничего не много произошло сегодня



Posted on June 7, 2017 by ckawell

Мы не очень много сегодня. Мы имели наш снято и мы узнали C++, но не так много на самом деле произошло. Мы не можем даже получить в наш проект в глубине до тех пор, пока мы утверждаются Советом IRB. Ну, хорошо. Я угадываю что я будет просто сделать пост в google перевод Русский.

Posted in Uncategorized | 7 Replies

Of Smart Tech and my Future



Posted on June 6, 2017 by ckawell

Yesterday I set up a Smart Outlet in my room. It took a little while to connect it to the IA State Wi-Fi, but now that it's set up I'm able to walk into my room and say "Alexa, turn on the lights." I hear an "OK" coming from my Echo Dot and my desk lamp turns on. It's so cool! Last night I told Alexa to turn off the lights as I climbed into bed and then woke up this morning to it automatically turning back on at my specified time. I never thought personal AI home assistants would be within my price range this early on, but it was very affordable and I must say I'm loving my Sci-Fi bedroom!

Today, Dr. James Oliver, director of the VRAC talked to us about grad school. He first gave us a run down in his personal experience in school and then proceeded to explain how grad school works, the value of a Masters or PhD, and how the industry fits into our school credentials. I found him very interesting and enlightening! Only last semester did I start to seriously think about grad school and only last week did I think about a PhD, so hearing his tips was very helpful!

Posted in Uncategorized | Leave a reply

A New Week with New Experiences



Posted on June 5, 2017 by ckawell

First off, a recap of the weekend: I spent far more time than I meant in virtual reality. Since we have access to two Oculus Rifts in our apartments, it's pretty hard to make my self do research instead. But on the bright side, I did make an interesting discovery; when one stay in a VR environment for a few hours straight, one experiences some interesting handicaps upon returning to the real world. For example, I had to pay extra attention to not bang my arms into walls and tables because I had gotten used to the world around me having no physical pushback.

However, I also spent some time in the real world this weekend. On Sunday we all went to a nonprofit a few minutes away from the apartments to do some work for them. This work was not mandatory, but the deal was that if we helped them out for a couple hours, they would allow us to use over the summer some of the bikes they repair. Thus, I found myself planting raspberry bushes, something I never expected to do, much less do during an REU research program!

Today however, I am back at work. I'm still very uncertain as to what direction our research will take us, but by the end of this week I should have a far better understanding.

Some of our time today has been spent learning the programming language C++. Honestly, it was a fairly boring section for me because I have a good deal of experience in object-oriented programming, but I did learn a few interesting facts about C++ of which I was unaware and I expect the class sessions on the language later this week will give me a far greater challenge.

Posted in Uncategorized | 3 Replies

First Friday: Research and Artificial Reality



Posted on June 2, 2017 by ckawell

We started the day with a little training on using research databases. IA State has access to far more databases than I've ever seen at Samford! I think the hardest part will be to figure out which databases will help me most in my research. I'll admit, this research bit sounds pretty boring, but I know how to speed read and skim read pretty well and after we have a few classes on how to properly read a journal or research article, I'm sure it won't be as bad as it currently feels.

After this, and a little Myers Briggs acclimation, we were given a tour of VRAC (Virtual Reality Application Center), which is where we will be doing our research. In one day, I got first-hand access to the greatest pieces of technology in VR, AR, and CAVE. I am amazed at how these fairly rudimentary and early-stage attempts at artificial reality are capable of making their users feel. Just a combination of sensors, screens, and controllers could make me feel I was on the USS Ronald Reagan, fighting my way through robot infested streets, or just surrounded by holograms now appearing in the VRAC facility itself. These are indeed the early days of VR and AR and I can't wait to see what future research and design will do for these emerging interfaces.

Posted in Uncategorized | 2 Replies

Day One



Posted on June 1, 2017 by ckawell

A mixture of excitement and apprehension. Apprehension because I now find myself in a faraway state among people I've never met before in an environment I've never seen before. Excitement because this new environment and these new people offer a wide variety of resources and possibilities. I come from a university of mainly humanities majors and my computer science department is very small. Needless to say, my access to state-of-the art resources has been rather lacking. As interested as I am in artificial intelligence and virtual reality, I have never really been able to experience much of either first-hand, but I expect this summer to offer

me the experiences for which I have been longing!

Posted in Uncategorized | [Leave a reply](#)