SPIRE-EIT|2019

Summer Program for Interdisciplinary Research and Education – Emerging Interface Technologies (SPIRE-EIT)

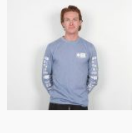REU|2019 ▾   About ▾   Calendar ▾   Courses ▾   Research Teams ▾   People ▾   Resources ▾

Lucas Wright

Poster Symposium Yesterday

🗓 August 2, 2019   👤 Lucas Wright

Yesterday we had our final project presentation where we got a chance to meet some other REUs around campus and show off what we had been working on all year. There were topics from every discipline and there were people working on some really interesting stuff. It was also really cool to see all of our faculty and student mentors come out to support our poster. I am really going to miss our lab. It was a fantastic summer. Thank everyone who helped me along the way.

🗂 Uncategorized | 1 Reply

Meet up with other REU yesterday

🗓 July 23, 2019   👤 Lucas Wright

Yesterday we made the trip over to Minnesota University to meet there Computer science REU teams and talk about our different project. It was really interesting to see what they had been working on and get an idea of what other REU programs look like. Each of the groups gave a quick presentation about what we were working on and we then had some time for a few demos. After this meeting, we got to head over to the mall of America where we did some shopping and rode some rides. The car rides were really long, but I was able to get a lot of reading done which was nice. We also got Cane's Chicken. It was my first time and it was very exciting. There had been a lot of hype surrounding this restaurant and I think that it lived up to it.

As far as our stress project, I think that we finally have data! We have to touch base with the other intern who is working in the bio lab and see what the data looks like, but I think that we should be able to start writing the results and discussion sections of our paper. I am also just really excited to see how well we did. We have spent a lot of time building the experiment and running participants that it will be fun to see the fruits of our labor. We also need to start putting the finishing touches on our poster. I think we need a few more pictures and a results section.

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Poster work

🗓 July 15, 2019   👤 Lucas Wright

Today Braden and I worked on the poster and have finished a rough draft. We are still waiting for the results so there are some gaps in our poster. We also finished the abstract and registered for the symposium in August. We have another participant to run at 3:00. We are still trying to find people to get to our goal of 20 people.

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Presentation Today

🗓 July 9, 2019   👤 Lucas Wright

I have my lifeguard shirt on and am ready to present our project. We have been working hard for the past week and I'm really happy with our group product. We have a solid powerpoint and have a lot of interesting features to display in our simulation. I am really excited about all the new skills that I have learned in the deeper dive. I think it will be really cool to bring some of these skills to other applications.

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GenderMag

🗓 July 3, 2019   👤 Lucas Wright

I think of the most interesting and important aspects of her talk was when she explains how to adopt these practices in the real world. She has examples about how companies have implemented these practices and the impact that it has on the success of the newly adapted product. It seems like people often throw the words diversity and inclusion around without actually doing anything about it. As she explains, just putting these buzz words in the mission statement of a company doesn't mean that any change will come. Her process is a proven way to make tangible changes in products and companies. As she says, a way of "walking the walk". This is so important, because addressing gender bias is very difficult and often overlooked especially in this type subject where few people know it is a problem.

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testing starts today

🗓 July 2, 2019   👤 Lucas Wright

So we have just finished polishing our dance stress task and we will start the preliminary testing today. We have also started working on our paper by collecting sources and building an outline. The deeper dive is also going well. I am really excited about the product that we are making. So far we have the simulator working. Now we are working on implementing some of the more interesting details like binoculars and other lifeguard tasks. We definitely have a great product to show during the presentation.

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VRAC Beach Patrol

🗓 June 27, 2019   👤 Lucas Wright

Beach patrol Captain Jack has been leading with valor and integrity. We have been working on writing a script that generates beach patrons. After a given range of time, one of them will start to drown and the lifeguard will have to find them and save them. We have most of these scripts working on test objects. The next step will be implementing this functionality to a few different prefabricated 3d models. We are making really great progress and I am really excited to see our final product come together. After building the first project for the stress task. I am feeling a lot more confident and the project is moving a lot faster. I really think that we will build a really solid application that will be a fantastic example of the practicality of VR.

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More Unity

🗓 June 26, 2019   👤 Lucas Wright

We started our deeper dive project this morning. We have decided to build a lifeguard training simulator. I am really excited about this idea for a number of reasons. First, having been an ocean lifeguard for the past two summers, I think will be able to tell a compelling story about why we built it and why it has applications. I am also excited to explore some interesting VR concepts like moving on land vs water, camera tracking (to see where people are looking), and environmental interactions via laser pointer. Jack has been instrumental in our Unity stress project thus far and I am looking forward to his guidance in this next endeavor. We began constructing the laser pointer this morning and finding the different assets that we will be using in the scene.

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Monday with a due date tomorrow

🗓 June 24, 2019   👤 Lucas Wright

The weekend was fun and relaxing. On Saturday we went to the farmers market in Ames and on Sunday we celebrated Emanuel's birthday with some cake and Uno. We have been continuing our progress on our project fine tuning the details for our first trial run tomorrow. In our deeper dive group we have started brainstorming ideas for what we want to build for our final project. I think we have a lot of processing ideas so far and am excited to see what we build. I am also excited to start working on a different project now that I feel more comfortable with Unity.

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Friday and time for a DANCE OFF!

🗓 June 21, 2019   👤 Lucas Wright

Today we started working on our deeper dive topics with our new group. I am in the VR group. We will be using more Unity to build different things like phone apps and games. On the topic of our stress project, we had a lot of progress last night and finished the game manager and the animation manager scripts. We can now start testing and tuning our game. This is going to take some time and we still have a lot of work to do, but I am really proud of our team and what we have built so far. I am excited to start the next stage of our project and experiment.

Just a moment ago I was talking with Abby about the expression "the blind leading the blind." I think a more interesting expression is "the blind leading the deaf." The blind leading the blind is analogous to a team with little diversity, whereas the blind leading the deaf, or rather working with the deaf, is analogous to a team with diversity. People with different skill and ideas form a strong team. This type of team is able to achieve things that no one member could on their own. Each individual member of our stress project team brought and developed a diverse set of skills that allowed us to build our model in a really short time. No one of us could have done it on our own. "I guess teamwork is all about finding the people that are different and learning the skills that your team needs and doesn't have. If your blind find someone who is deaf.

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More Stress project and more Unity.

🗓 June 19, 2019   👤 Lucas Wright

Today we had another Unity class where we went over a few more important skills. We learned how to make UI stuff and some more scripting techniques. Our stress model is almost at a place where we can start testing the different elements that we will need to fine tune. We have a lot of animation work to do, specifically how to implement control animation flow from the script. Once we get a good handle on this I think that the rest of the model can be built with the skills that we have already learned. We also think that once we get a preliminary model working, we can begin making the code more efficient and more detailed. We would like to implement some game managers to control the flow of our game. Right now the scripts call each other sequentially. We would like to implement one overall class organizing all the subscripts and their timing. We have drawn out how we want to organize this hierarchy and will implement it once we get a working prototype to show our mentors. We also need to write a draft of our methods so that we can get in reviewed by our mentors. We think that this will put us on the same page as far as our experiment

🗂 Uncategorized | 1 Reply

Unity!!!

🗓 June 18, 2019   👤 Lucas Wright

today our group is hard at work again building our virtual model. We got a ton of work done last night and build in a ton more functionality. We just finished meeting with one of our project mentors Neil to go over the final details of the project concept. We also just met with Jack, a unity master to talk about some of the details necessary to bring our project together. Tonight we plan of complete a rough model that can be used for a few tests so that we can fine tune some of the details. All in all I am really enjoying programming with Unity and have found it to be very powerful. We also have the task of designing a team T shirt tonight. It will be fun to see the team bring out their creative side.

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First day of Unity class

🗓 June 17, 2019   👤 Lucas Wright

Today is the first day of learning Unity. Our group has been teaching ourselves unity for a few days now and are realizing that there are a ton of complexities that we were not anticipating. We have a basic framework for our project build, but linking it all together with animation is tricky. We are hoping that the classes this week will help us finish our project. We spent some solid time this weekend learning some of the skills that we will need, but we still have a lot to learn. I hope that we can finish the project by Friday.

🗂 Uncategorized | 1 Reply

Its Friday! was a busy week.

🗓 June 14, 2019   👤 Lucas Wright

This week was focused on 3d modeling using two different programs, Maya and solid works. I found maya to be far more user friendly and more fun. I am really enjoying the creativity that comes with this type of work. It is a nice change from the c++ last week. I think that my background in sculpture has carried over well to virtual modeling. I am really excited to about the different applications for these skills and can't wait to bring them to my classes in the fall. We have also been making steady progress with out stress experiment. We are getting better at Unity every day and have taught our selves and lot of new skills. Given the short amount of time we have to finish the model, each member of our group has been learning about a different facet of modeling we will need for our project. Rose is working on animation of objects, Braden is working on the timer, and I am working on the music. I think that we will be able to bring these components together and build a functioning game.

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Lots to Do.

🗓 June 12, 2019   👤 Lucas Wright

We have just finished our third class with solid works and I no longer hate it. It was very annoying to learn, but I am getting better and it has started becoming more fun. We are about to start learning our next 3D modeling software "Maya". Our group is also working on teaching ourselves Unity in our free time and in the evenings. We have been given a soft deadline of next Tuesday for our completed VR model. We will be focusing on C++ for the rest of the week and even though it is hard we will be able to learn the skills and finish the model in time. We have almost finished planning the model and drawing out the schematic of our game. We think that it will be very effective in building a stress response in a wide variety of people. It will also be more fun to administer than other traditional stress test models like public speaking or mental math. We had a fun and productive team yesterday at Birdie's house where we went over the model, ran a hot sauce stress test experiment, and went for a goat walk. (with real goats...)

🗂 Uncategorized | 2 Replies

The Start of Week 3

🗓 June 10, 2019   👤 Lucas Wright

This weekend we went to a team building ropes course where we did a few different activities like a giant swing and climbing. I think that we all had a lot of fun and learned to trust each other. Many of the team building activities were challenging and required team work. By forcing each person to do their part in the activity we learned to support each other where needed. Today we started doing some 3D modeling with solid works. I have never worked with anything like 3D modeling before so this is definitely a change of pace from last weeks c++. I have always wanted to learn this skill so I am really excited for the rest of the week, but I am definitely going to need to do some work outside of class to keep up. At this point I am thinking that I would like to do the deeper dive in this topic, but all the topics sound really cool. Our research project is coming together slowly. We are working out to plan for our model and method to gather data. I am in a group where we have to start learning about how to elicit it. I think that the project will really take off when we have our model we begin to test subjects and collect data.

🗂 Uncategorized | 2 Replies

Friday of Week 2

🗓 June 7, 2019   👤 Lucas Wright

Today is the last day of c++ with Adam. We are finishing up with some classes and multiple inheritance principles. We wrote a "shape" class with square, circle, and triangle subclasses. I really enjoyed these classes and have learned a lot. It has been some time since I wrote in c++ and I was nervous when the classes started. I now feel much more confident in c++ and feel like I do have the background knowledge to meaningfully contribute to my group and to the program. We had our first wet lab class with Lotta about how stress hormones are regulated and the adverse effects of both too much and too little cortisol in the bloodstream. Our group has also been given some very interesting literature about the effects of stress, the best ways to elicit a strong stress response, and some of the other important research in the field that we will be building upon. Tomorrow we will be doing a team building activity and a ropes course. I am excited to see how well our team performs together and what we can learn about each other. Yesterday we hosted a few VR models on the vive to get a better feel for the equipment and the possibilities. We first experimented with a model where the participant walks on a plank high above a city. This was very unnerving and far more realistic than I would have expected. Next, we experimented with a zombie model. In this model, the participant has to shine the light and get the zombies before they get to you and eat you. This was scary as well. Lastly, we were in a model of a room that had just caught on fire. This was by far the most real experience, but not as stressful as the first two models. We have a lot more research and brainstorming to do before we come to any conclusions about what we are going to build. one of our latest interesting ideas is a virtual dance battle with a crowd watching. We think that this would elicit a strong social evaluative threat as was uncontrollably and unpredictability. These are the key ingredients for a strong stress response. This is my traditional public-speaking test works so well. We also have tossed some other ideas around like getting pulled over by a police officer and defusing a bomb. Hopefully, we will have time to make a few different models to test before we pick one to collect data with.

🗂 Uncategorized | Leave a reply

more c++

🗓 June 5, 2019   👤 Lucas Wright

This morning we had another class with Adam on c++ skills. we worked on some loop, conditionals and general structure. We touched a little on recursion and wrote a simple fib function. After our class my stress group and I worked out some of the kinks in our research question paragraph. In the afternoon we are going to be doing some more coding. I am working on getting used to visual studio. I have never used this program before, but I really like it. Yesterday we went to a Ada Hayden park and did some unsuccessful geocaching. The walk was still very nice despite not finding any caches. Grill master Andrew made some amazing burgers and we had a picnic when we were done. My new bike is still great and making the commutes to and from work much more pleasant. I have been doing a lot of psychology reading about stress and the effects on the body and mind. I have found that it is much harder to define stress in a biological sense and even harder to reliably replicate a stress response in subjects. I have also learned that there is a strong correlation between viewpoint clarity and stress. People that have a low stress response have more internally emotionally controlling with others. This can be a very real and lasting effect on peoples lives. This stress response can be different depending on the person and their history. Our research can be used in future experiments to expand our understanding of stress and its effects on humans.

🗂 Uncategorized | 3 Replies

The craft of research and photos.

🗓 June 4, 2019   👤 Lucas Wright

Today we started with a class lead by Abby about some of the fundamentals of IRB process and writing a problem question paragraph. We spent some time as a group deconstructing the nuances of our experiment in order to build the foundation for our problem question. After this class, we spend some time with Eliot and talked about his path to where he is today. This an inspiring talk with the takeaway message being that there is not a proven formula for success. Just do what you enjoy and everything will fall into place. Keep at corn mind and doing the things that you and. After this talk, our deeper dive group went to our faculty mentor's house for a team meeting. We got to meet this rest of the team that will be working with and plan some of the upcoming goals. After our meeting, we came back to campus and took some pictures with Paul for the website. Now we are going to have a celebration of Ada Haden park and doing some Geocaching.

🗂 Uncategorized | 2 Replies

Week 2

🗓 June 3, 2019   👤 Lucas Wright

This weekend we did some volunteer work with a program that gives bikes to the homeless called WeCycle. Karina and I built a storage rack for organizing the wheels and tires. Some others helped her fix and organize some of the other bikes. Vlad was nice enough to give our group bikes for the summer so that we can get around ISU and Ames. This morning we got started in our first C++ class. We will be focusing on C++ for the rest of the week. Strengthening and refreshing our C++ will make the transition into Unity much easier. We will be using unity to write a lot of the code for our final area in virtual reality project We will need to learn these skills as fast as possible so that we can finish our model and begin to testing. Our group seems to have a great dynamic so far. In the short time working through some basic problems this morning, I have found us to be a supportive and efficient group. I am very excited to begin work on some more challenging problems and ultimately our final project.

-Lucas W

🗂 Uncategorized | 1 Reply

Tour of Virtual Reality Technology

🗓 May 31, 2019   👤 Lucas Wright

Today we got to experience some of the different resources that we will be using this summer. First, we got to use the C6, a room-sized virtual reality machine. We were able to take a walk on a full-sized aircraft carrier and scratch F-18s take off and do fly-bys. This machine is the only one like it in the world. It has a higher resolution than any other VR machine. Next, we got to take a look at the 3D printing lab. We looked at different printed objects and talked about the skills we will be learning this summer like 3D modeling with various different software. We also looked at the course rift and see, two of the virtual reality systems that we will be using along with our research. Yesterday we got to use and test the vive in our research lab. I am very excited about this project. We will be building virtual models designed to stress people out. We will then test these models on controlled subjects and measure their stress response. We will measure their response by collecting heart rate data and testing cortisol levels in saliva.