

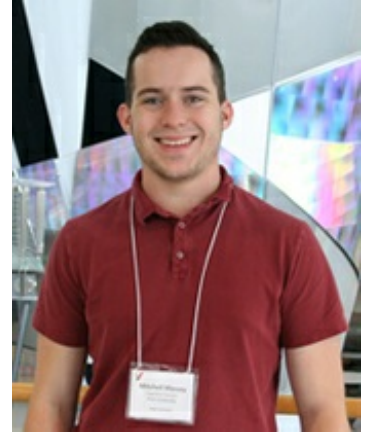
Mitchell Massey

 projects.vrac.iastate.edu/REU2014/

Time to finish the paper

Posted on [July 23, 2014](#) by [Mitchell Massey](#)

Working to summarize our interface's utilization of gestalt theory and situation awareness design guidelines. It turns out that writing concise and eloquent sentences is really hard! I enjoy the challenge of formulating my ideas and putting them on paper, but I have had a lot on my mind recently. Still finishing financial aid stuff, missing family, anxious to return to school. I will be happy when the project is finished. With that said, I have truly enjoyed my time the last two weeks, hanging out with friends. The lake house trip was really incredible, and I wish I could go tubing again this summer.



I've been pretty low energy this week. I definitely need to be eating more protein in the mornings and eating less junk during the day. I messed up my foot a couple different ways, so I've stopped playing soccer with the group. I should try going to the gym sometime in the next few days.

I really enjoyed the IP talk today because I actually learned a lot that I didn't realize before. Suddenly patent law seems really interesting? I definitely don't want to be a lawyer, nor do I have the countenance for a law career. However, I think that the tech industry has a lot of nuances beyond HCI that are really challenging, that could probably use some optimization. Imagine if the government agencies did cognitive walkthroughs to evaluate their processes *gasp*. Maybe I should be moving to a European country?

— Mitch

7.18.14.1.22.35

Posted on [July 18, 2014](#) by [Mitchell Massey](#)

It's another Friday, and I'm thinking about how far everything has come along. I remember our group at the very first moments, when people were still shy or still only talking to roommates. It's been a neat program, and it's hard to think that we have two more weeks left. In some ways, I'm ready to have the project finished and behind me, to enjoy August with family, and to see friends and start classes thereafter. But in others, I'm not ready to leave. I enjoy being in the lab with smart and interesting people, and I really like the conversations, sports, activities, and fun times we all share together.

The project is at a standstill due to some technical difficulties with data transmission, but I think it will be alright. Our team is ready to get it done, and we'll be working on the paper simultaneously.

Looking forward to a fun weekend.

Check out this awesome location-based crowd-sourced game: <https://www.ingress.com/>

Poster time: Funday with an M

Posted on [July 14, 2014](#) by [Mitchell Massey](#)

Had a great weekend at the R. Gardens and being lazy yesterday. The work is picking up, so I'm not sure how much "laze" I can have over the next two weekends. It's weird to think that we have increasingly little time left. Everyone has become great friends.

Hoping to finish some cool diagrams for the poster, and get the template decided. We're testing the interface on the flight sim again today. Tomorrow, we'll be implementing more aesthetic and component arrangement changes.

Yeah, I'm just focusing on putting work into the project, enjoying people, and trying to get other stuff (GRE, Financial Aid, etc..) taken care of. Really enjoyed the guitar / singing this weekend. Hoping to get more comfortable with the 12 string. The double strings are going to build heavy calluses – I need to get better at picking through the string pairs instead of hitting only one in each pair.

Music in my head..

Posted on [July 11, 2014](#) by [Mitchell Massey](#)

A Brief Apology

It's been a while since my last post. A lot has happened since then. 4th of July fun, project presentations.. I'm sorry that I've fallen out of touch with the "blogosphere" here recently.

Life Contemplation

I think this internship has been a lesson in patience and communication for me, as well as a demonstration of self — agency, as Getch would call it.

I can't seem to put in words what I'm feeling right now. It's a combination of anticipation for senior year and a sense of being between things. This internship is almost over, and we'll be back to our normal lives soon, whatever that means. In college, I have been in a constant flux of change and adaptation. I changed my major from Computer Science to Cognitive Sciences. My friend groups back home are very mixed, and I wax and wane through each of them at different times. I have had many different aspirations for my future. And now, I am still in a struggle to know what I want from life. Industry or grad school? This is only part of that inner quarrel. What kind of person do I want to be, and what kind of lifestyle do I thrive under? Am I fit for a life of research, or am I meant for the entrepreneurship of consumer tech? I love learning about tech journalism, policy, and discoveries, and I think my generation will see many more rapid innovations that will totally change the landscape of human existence, and I want to share a part of that.

I got a call from my mom and sister today. It's my brother's 18th birthday (sighh I'm getting old...), and I've been missing them a lot more recently. I'm excited to see them in August, but that will mean leaving all of the friends I've met here. Not looking forward to that moment, but it will be alright. Lots of good memories so far, and more to make.

Flight Project and Team Dynamics

My team's research has been slowly and steadily progressing. The project presentation went well, and I am excited to test the interface out on the flight simulator. Our talk with Colonel Martin was really productive. Our application project is special in that it is not directly tied to a grad student's research, but it revolves around a classroom need. This has provided interesting challenges for research and challenges, and I think we are doing the best we can to compromise for both the needs of the REU and for the flight simulator training needs.

Shamaria is a trooper. She has been the lead programmer for our team, and she has put a lot of work into our interface. It is looking great, and I am really proud. Meanwhile, Holly has been doing a great job of learning the ins and outs of the Baron B58 and the engine gauges. Every plane has slightly different throttle controls, and there are complicated sequences and checklists that pilots use to check the plane's status. I'm really thank full to have

computer and mechanical engineers on my team, and I am definitely working to be a more effective communicator and team player. As a User Researcher, Cognitive Scientist, and Front-End Developer, I know have different design approaches and thought processes from engineers sometimes, and I think our strong personalities work well together to create practical and well-thought out interfaces. It is not without challenges though. I'm glad we pulled strong through the presentation.

Fun Stuff

I found a guy on Craigslist who is selling a nice 12-string guitar, an instrument I've always wanted since I developed my own playing style in high school and college, and I am going to pick it up this Saturday. (Thanks for offering to drive, Holly!!) My dad had a 12-string in college, and I love intricate and ambient acoustic riffs, so it is an investment in sentiment and therapy for me. A 12-string has a unique sound, but if anyone wants to suggest songs for me to do for the group, I would be happy to oblige! I love to sing and perform, and it would be fun to have a group sing-a-long.

It's the weekend, soon!!

Figuring stuff out

Posted on [June 27, 2014](#) by [Mitchell Massey](#)

Wow. I look at everyone's blog posts and reactions today. So much variety. It's Friday, and that means different things for different people.

I am personally feeling pretty good today. I think I got out of my midweek stress, and we've been doing good work on the project milestone requirements.

After a blood test today, it is clear that my infection is gone, so I just need to get rid of the seasonal sinus / allergy stuff. Looking forward to being at 100%.

Here's to the weekend! Mall, coding, shows, laundry...

So many opportunities!

Posted on [June 24, 2014](#) by [Mitchell Massey](#)

Today, my brain has really been thinking about the future. (You know, the thing that happens when school is over??)

The workshop on Graduate School personal statements got me thinking: What do I really want to achieve – how do I want to better the world?

These questions were heightened by the lunch lecture we spent learning about using Augmented Reality and Game-Centered Learning in Education today. (I really want to share some of those points with my mom, who was recently appointed as a Gifted & Talented Teacher. I think the Interactive Paper and Unity-based designs would be great for her students!)

There are so many research facets of emerging technology that I'm interested in.

I've mentioned acquisition of new technologies. How do people learn to use new technical tools, and are the teaching tools optimal? I'm referring to programming languages, 3D modeling/printing, GitHub, and other technical tools, like R and ggplot2 for data analysis, that I've been challenged to learn.

But I'm also interested in natural / ecological interfaces. How can we develop interfaces that are fluid in our environments? That maximize local social interactions, but allow for long-distance interactions as well? What role

will wearable technologies, augmented reality, virtual reality, and even implanted / biological interfaces play in the future, and how can steer it onto an ethical and productive course?

I'd like to look more into researching technology policy for governments, schools, and the public. Big issues like Net Neutrality, Cyber-Surveillance, government control of the web, and data security could use the help of some user experience researchers and others who can be empathetic to the needs of all stakeholders, and perform research that gauges how policies are implemented and interpreted. Also, educating policy-makers with hands-on demos (ex: 3D printing for medical / military use) would be great. Another policy example is the use of Google Glass in vehicles, and self-driving cars for that matter.

Additionally, I'm really curious about redesigning our technology. Chorded keyboards, haptic touchscreens, open NFC communication for easy displaying information.. I could keep going..

While I'm interested in basic information architecture in web structures, performing surveys and web-analytics for tech companies, and developing apps and games, my interests in HCI are much more exploratory and future-oriented in nature. One great thing about doing research is asking and answering questions that are not solved, and I think there is plenty of room in emerging technologies, which our program is named after.

6.23.14.1.21.10

Posted on [June 23, 2014](#) by [Mitchell Massey](#)

Can I just say that this weekend was awesome?

I felt pretty drained after a week of more classes, without clear progress on the project (lots of deliberation).

However this weekend was equal parts entertaining and productive!

- **SkyZone:** Wow, I was glad I went for the full hour. Dodgeball was insanely fun. I'm pretty pumped for paintball now.-
- **IRB Draft:** We got through everything we knew and typed out the first draft. We have meetings today to fill in the blanks that we don't know. Hopefully we can get this thing submitted in the next couple of days.
- **Zombie Burger:** NOM *brains
- **QT Tutorials:** Feeling a lot more confident about the interface designing component. The real challenge will be *linking Xplane data* to our design.
- **Ticket to Ride:** Still have that song stuck in my head. That game was really fun, and I hope we can play again (without Sam...)
- **HFES Papers:** After some helpful hints from faculty, I have found some better research papers to lead that will+ direction of the interface design. This will be helpful for the lit review paragraph due this week.
- **SAO Sunday:** Watching a few hours of *Sword Art Online* with Getch and Phil struck a chord in me. I think I want to watch more anime. I'm hoping that I can get over Asuna in a reasonable amount of time.
- **World Cup:** Depressed that USA came so close to beating Portugal. I just hope we can advance out of the group!

Here's to another great week! Still need to get all of our experiment solidified and our interface mocked up. It will be interesting to see how the X-Plane API meshes with QT. I'm thankful for our awesome programming lead, Shamaria, and our mechanics expert, Holly. Couldn't have asked for a better group or project.

Thanks Anton, for saving our food last night. I'm glad someone remembered to turn on the fan in the apartment.

USA

Something Unique ?

Posted on [June 20, 2014](#) by [Mitchell Massey](#)

I was just struck with the question of, "where will this experience take us?". In the same way that minute events have shaped my life course over the last 21 years, there is no telling what this experience will do for all of us. There are obvious paths that this program leads: grad school, networking, programming experience, design, etc. ; however, it will be interesting to see what our 10 week process of self-improvement, collaboration, and hard work will add to our lives! We have most of the work ahead of us still, but with only six weeks left, we should try to absorb as much as we can, enjoying each other's company and getting out of our comfort zones with the research.

I'm really looking forward to this weekend's activities, and I am excited to have this week behind us.

6.19.14.13.32

Posted on [June 19, 2014](#) by [Mitchell Massey](#)

My blog posts have been becoming increasingly shorter due to our work levels, I think. As a whole, I have been pleased with the last four weeks, but it will be nice to focus on our main project.

Today's to-do list:

- Read Journal Club Article
- Work on IRB Application
- Start QT 5 Tutorials
- Research design for visual perception psych
- Go to Flight training lab to work on simulator

Other stuff:

I created a workspace for my team using an app called Trello, and I think your teams might benefit from it as well. It is essentially a flow of cards or lists that allow teams to list all that they need to get done, assign roles, share files / links/ comments, and basically get all the team's thoughts into a single space. Check it out: <https://trello.com/>

I've been looking forward to the fun stuff our team is doing in the future. World Cup viewing, D&D, Paintballing, SkyZone, Camping, etc.. I'm the kind of person that can be easily distracted by the fun stuff, so I am hoping to work hard in between fun bouts.

A Time for Everything?

Posted on [June 16, 2014](#) by [Mitchell Massey](#)

I think our entire group loved this weekend. We were able to get outside and enjoy nature, a much needed break

from the walls we are constantly surrounded by in labs, apartments, and cars. Sometimes, soccer just isn't enough communion with the outdoors for my taste.

Our first OpenGL class was pretty interesting. I'm actually really interested to see what industry-level graphics packages look like in large video game productions, so I think OpenGL is a good introductory link between our C++ and 3D Modeling knowledge, as Bhaskar said. It will be interesting to apply our technical skills to our research and later projects for school/work.

Here's to another busy week!

Ready to fly..

Posted on [June 13, 2014](#) by [Mitchell Massey](#)

It's been a busy week, but I've still got my head up. We're almost finished with the modelling project. We're building a bathroom kit that helps you keep your sink area clean and organized by managing dental hygiene gear. It includes a wall-attached toothbrush holder, a toothbrush cap, and a toothpaste "squeezer". I worked on the squeezer, an apparatus that helps force the excess paste from the bottom of the tube towards the top to minimize waste. I originally wanted to make a cool design that integrated our theme by adding an airplane topper or image engraving, but in the interest of time and simplicity, I decided to drop that in favor of a (debatably) ergonomic spherical knob/handle for ease of use.

We've got a packed day ahead. My team is going for a morning flight in a small aircraft to prepare for our project. I'm really excited about the evening outdoor trip too. I've been really satisfied with the extracurricular activities. It's nice to get out of the lab on the weekends and enjoy everyone (including the mentors) together.

I personally have liked the meetings the last few days, as I think it is important to explore some of the issues (research and otherwise) that are a part of grad school, funding, learning, and administration. I'm increasingly convinced that I will want to undergo a higher-level graduate school experience, so I like learning as much as possible.

I'm excited to start OpenGL next week, and to start digging into the XPlane programming. Also hoping to get some more sports in.

What are the main UX issues for novice 3D Printers?

Posted on [June 11, 2014](#) by [Mitchell Massey](#)

Today's Overview

Every day is feeling more and more productive! My Flight Sim group finally finished a strong abstract draft, and I'm getting more proficient at SolidWorks.

All of the soccer, rock-climbing, volleyball, basketball, and gym activities are getting me thinking about more fitness needs I have! I would love to get in good shape before I go back to Houston. I would love to work on my cardio / lung capacity and endurance, as well as gain some muscle. I just need to find a workout that I can stick to.

Between boffing, Mario Cart, Magic, I can't say that the last few days have been boring! I'm most anxious to start working on the interface design for the sim though – My group is FINALLY going up in the air this weekend, and we'll probably do some more simulations before. I love flying that thing.

Is 3D P 4U?

On to my blog topic of the day. After very broad and thorough lecture on the different methods of rapid prototyping and the recent developments in 3D printing, I can't help but think that there is something wrong with "the state of the art".

In the same way that it took several design cycles to get PCs integrated into the general public arena, I think that 3D printing technologies have a lot of usability hurdles to jump before we see a mainstream "Google- or Apple-esque" iteration that an Average Joe can use without a software manual or a crash course in material science.

I don't think this issue will be going away anytime soon. Although companies can and have put relatively simple-to-use machines on their product lines, the problem goes much deeper than the "epidermis" that is UI design.

The hardware dynamically adapts its specifications (temperature, extrusion rate, support structure type, speed, etc..) according to physical and economic constraints around the design at hand, the printing material, the printing size, and other limitations that must exist in the universe (i.e., physics).

This unfortunately means that the simplified "static" machines must narrow the scope of their use. A simplified printer today has to narrow itself to one kind of material, one size of design, one color extrusion, or one file type.

The real goal (which I think MakerBot has been progressing towards) is a dynamic and predictive machine that can quickly, efficiently, and cheaply adapt the system specifications for **ANY** design needs under-the-hood without excessive user intervention. (Think automatic transmission, autopilot, or weapons lock-on.) This is a harder problem than it first appears.

Last year, I wrote a paper for my HCI class that discussed the 3D Modeling software (1997+) and 3D printers designed for children. The interesting trend that I saw was the use of affordances (natural calls-to-action in the design environment), accurate predictive AI, easy hardware activation and filament replacement, and (sadly) feature simplicity. (If you're interested in the paper, let me know, and I can send it to you.)

I don't think anyone in our intern group would say that SolidWorks is simple to use. It is certainly powerful, but it is a highly cognitive- and motor-intensive task to implement the reference frames, shape functions, etc.. necessary to make (for example) the hammer in the loft tutorial.

How can we combine implement a SolidWorks software that is as simple as [TinkerCad](#) but powerful enough (gestures / haptics, perhaps?) for industrial engineers to use on a Boeing Aircraft mockup?

How can we make a simple printer like the [Zim](#) without limiting power and flexibility on an industrial scale?

Social Psychology and HCI: What is the destination?

Posted on [June 10, 2014](#) by [Mitchell Massey](#)

After a day of SolidWorks and lecture, I'm happy to be listening to some Album Leaf as I write. I think as extroverted as I get, missing some sleep and an antibiotic is not the best way to stay engaged through the day. Thankful for coffee ~~

@Reyjun was a hilarious and socially engaging lecturer, and I was especially impressed by the research questions he presented. I think it is the responsibility of aspiring researchers to think critically about data, truth, and applications. What are the societal implications of statistical relationships between internet presence and demographics, psychiatric well-being, or personality? Although "correlation does not equate to causation", and it can be tricky to pinpoint passive usage of technology without advanced invasive experimental methodology, is it unreasonable to extrapolate inconsistencies between what Dr. Junco called "morale panic" media and real technology benefits? I admire his call for honest reevaluation of what we "self-communicate" about our social technology habits.

Questions I still have:

- Does social networking technology effect (enhance, detract, or interact with) the use of different methods of self-expression? (journaling, art, writing, construction, film, STEM, athletics)
- To what extent should HR or job seekers rely on web profiles? Is it fair that I be evaluated by my (sometimes underused or unfiltered) social spaces on the internet?
- How do we develop natural interfaces that maximize the positive social network benefits while minimizing the (measurable and statistically reliable) socially destructive effects?
- Are there possibly psychologically damaging ramifications of increasing outreach (or at least, internet “stalking” of weak ties. (This question is rooted in the idea that everyone’s personality is only the poster for everyone’s film, or that my profile only represents what I have filtered or optimized my content for public presentation. This means that I might only show happy or attractive photos, when in reality, there is a lot more going on “under the hood”.)
- In the same way that we can monetize fast access to goods or services, are we at risk for becoming a society that monetizes relationships?
- Other stuff that could fill this screen. Looking forward to hearing your ideas..

Rained out

Posted on [June 9, 2014](#) by [Mitchell Massey](#)

I had a blast at the Farmer’s Market this weekend. Best \$5 I ever spent on a grilled cheese, without a doubt. I didn’t mind the rain. Mostly because Chenglong and I stayed inside one of the shops to talk about grad school stuff. He’s a really interesting guy and had a lot of good insight. I felt the same thing about Desmond. We got to talk about different HCI grad programs at the luncheon, and I was really interested to learn about his application / decision process, as he applied to the same programs that I am interested in.

I also enjoyed playing soccer & volleyball with the other REU programs yesterday at the park. I think I need to stay active this summer, so I’m hoping to continue going to the gym and doing sports when I can. Want to lift and play basketball sometime soon.

The SolidWorks class today was really great, although my computer was still getting set-up. I think that I’m still wrapping my head around the complexity of the software and workflow. The jargon is still new to me, so the button items are still a bit confusing. However, I really like thinking in terms of geometry and patterns, so I’m hoping I can make some cool abstract art with some more training. I have a drawing style where I compile curving points or triangles in layers to create obscure items. I think a third dimension to this would look cool. I’m also interested in faces.

Excited to present our Simon game today! I think we did a good job. Props to Shamaria for being the lead programmer in our group. We have cool sound and color output, while the game operates under simple console output and input text. We’ll see how it goes!

Getting Closer

Posted on [June 6, 2014](#) by [Mitchell Massey](#)

I really liked hearing Col. Martin talk about his experiences today in Journal Club. I’m incredibly happy to be working on the flight sim project with my awesome team members, and I think today showed how our project can really affect trainees in emergency scenarios. I also enjoyed our group leading the discussion today. I’m lucky to have taken

some great HCI classes, and I am happy to have experience with some of the cognitive models that some Cognitive and System Engineers use to evaluate their systems.

Here's the link to the Cogtool source code: <https://github.com/cogtool/cogtool>.

It's a great tool for evaluating the ease of navigation through the infrastructure of a website or any kind of interface where Fitt's law is important. It can calculate times for speech, text, and keyboard/mouse, and touch input and recognition, and you can easily manipulate the motor / cognition variables or export code to ACT-R for comparative studies or more complex simulations.

Moving on, our Simon code has been getting better, and I'm looking forward to getting a final product. I'm really hoping we can add the more complex features to make this game stand out a bit.

The Future?

Posted on [June 5, 2014](#) by [Mitchell Massey](#)

Wow, I have so much to think about right now.

As a rising senior, it is strange to consider that I will be done with my Bachelors in less than twelve months.

As an REU intern, I can easily expect that this is nowhere near the end of my professional development. This program has taught me that I have so much I want to learn, that there are still so many doors open to me that I have not considered.

For instance, I have steered my entire undergraduate degree around the possibility of being a User Experience Researcher. I have taken HCI classes, STATs classes, and programming classes, and I have been working for Human Factors and User Experience labs on campus.

However, one of my greater shortcomings is graphic design. I have artists in my family, so I have grown up with a strong appreciation for beautiful things. I love to draw, and I am enamored with the design of video games, movie special effects, and interactive websites. I have also learned how to use 3D printers through my role as webmaster on my school's solar car team, which does a lot of rapid prototyping.

After Eliot's presentation on medical imaging, I am very excited to get started with the 3D Modeling and OpenGL classes. Additionally, I have a strong feeling that I will be even more prepared for the hard technical classes I will be taking in the fall: Mobile Application Development (I guess Objective-C for iOS is now outdated, so maybe I can focus on Android?) and Video Game Content Creation. I'm hoping that branching out to these fields will help me discover new passions for both my professional and personal life.

Also, our group got our plane assignment for our interface today: Beechcraft Baron B58, a twin-engine 6 seat aircraft.

We have the dials and manuals, so things are moving forward!

Antibiotics & Terminal Colors

Posted on [June 4, 2014](#) by [Mitchell Massey](#)

Finally got around to seeing a doctor for my sniffles. After a trip to WalMart this evening, I will be all set for maximum productivity!

Really enjoying the programming course. I'm really proud that I can keep up. I was anticipating more trouble given my non-compsci background. The slides and mini-assignments are very helpful.

Coffee. BBQ. Sketching. Reading about Zen Meditation. Watching Cartoons. Paying off a small loan.

These are things I have been doing on the side. I'm excited to have the lit review, c++ project, & abstract finished this week, so we can begin working on the flight interface.

Probably going to fly the simulator more at some point. Looking forward to paintball too!

Thanks for being awesome project team members, Shamaria & Holly! (Elliott too!)

Now, back to work..

Indian Food is Good in Ames!

Posted on [June 3, 2014](#) by [Mitchell Massey](#)

Rescuing My Macbook

I had a minor accident yesterday. My long time friend, my laptop charger, finally passed away, so I hiked to the Student Book Store at the Memorial Union building at 8 am (after failed late-night trips to Walmart & Target) on a rescue mission — thankful to have my laptop again.

bool is_programming_class_success = TRUE;

Today, the programming course went pretty well! I'm finding that I can translate most of my programming experience to C++ syntax pretty easily. I'm hoping that the OO lessons will be that way too. I'm anxious to start working on our game! Battleship may be harder to implement than we anticipated, so it looks like we will steer our efforts towards the Simon game. Maybe we can figure out how to render the command line prompts in color? (Some iteration of special characters?)

The Neurological Implications of Poker?

I was very interested in our lecturer's presentation today! It was nice to hear some psychology jargon, and I am always interested in research dealing with BlackJack. I was really curious about how generalizable the findings would be; more rewards or higher success rates might lead to different cognitive feedback reactions in different parts of the brain and my alter the slow wave effect measured in their study. I am also curious about how manipulations of system feedback aesthetics (e.g., green for wins vs. red for losses, constructive / nice feedback vs. humiliating / negative feedback, real winnings vs. simulated winnings) might change observable neurological reactions.

Meeting Grad Students and Eating Naan

Yumm. Still having positive vibes from the Indian buffet Elliott took us too.

I had a nice conversation with some of the Aerospace Engineering grad students. I'm starting to become more comfortable with the idea of considering smaller grad schools (say, ISU in Ames..). I want to start thinking about the kind of work environments, professors, projects, etc.. that I would like working on. There are a lot of different types of grad schools(thinking back to my undergrad experience in contrast to my time at ISU), so I am hoping to do some critical thinking over the next few months about what I want.

It was also neat to see their group interacting – they seem really happy, friendly, and smart, a lot like the interns here and all of the mentors.

Bowling

Next Monday. It's going to happen!

An Overdue Review of Friday-Monday Shenanigans

Posted on [June 2, 2014](#) by [Mitchell Massey](#)

Hi all! In this post, I have a lot to cover because my team (Flight Simulator, whaddup!) had a client meeting with Colonel Martin, our primary stakeholder, during our prime blogging hour. Due to Saturday extra-curriculars, Sunday library hours, and simple procrastination, I am only now going covering events from the last 4-ish days.

It's been a whirl of a weekend. Considering that we have only been here for less than a week, so many things have changed. We now have project goals and roles, as well as group "synergy" (I think this word is cheesy and over-used by corporate management entities, but I think it sums the experiences of the individual teams and the entire REU body, including the mentors. It incorporates the ideas of comfort, respect, productivity, and bonding that I think we have accomplished. So bear with me..). I will try to write about this week's experiences in semi-order.

Journal Club

Coming from an applied psychology background for human factors and HCI, I am used to critically analyzing & decomposing research papers, but I was very happy to read an "actual" UX Design paper. Most papers that I have to read present cognitive models or review system usability findings. This article, [Love it or Hate it](#), explored the value of interactivity and aesthetics for comparison against the pragmatics of 3 dissimilar museum websites (Google, Louvre, National Gallery), so it was a fairly different research article experience for me. I actually found myself questioning several of the findings and methodologies recorded and employed by the researchers.

I had three main qualms, which I briefly mentioned in our JC meeting:

1. **Non-generalizable Website Selections.** Though I certainly understand the time, budget, and subject constraints of the process of user or system research, I was somewhat dissatisfied that this study only considered museum websites. Funding sources, interest groups, publishing hype (from big names), whatever the (entirely legitimate and empathizable) reasons for this selection, I am not convinced that an exclusive study such as this is entirely generalizable. The only redeeming factor that I would consider is that these museum websites have a unique purpose (interactive web tours or simple exhibit navigation) that justifies the use of heavy interactive design elements.
2. **Non-Orthogonal Variable Comparisons.** I don't have the time or patience to lay out all of the variables that this study measured, but if you read the article, it is easy to see that the qualities they tested are complex and interrelated. I am no statistics expert, but I find the need for multiple corrections (Greenhouse-Geisser estimates for counteracting the violation of sphericity, Bonferroni Correction for multiple comparisons, etc..) disconcerting. It seems that perhaps the variables they chose for testing were not independent enough to clearly determine findings (**Anyone with a STATs background, please let me know if I am wrong!**). I think that it should have been easier to determine variables that would be more differentiated in the statistics.
3. **Presentation of Statistics Graphics.** I am kind of a snob when it comes to charts, probably because I've had opinionated STATs teachers. I'm a big fan of graphs that show distributions of variation in data (not just simple means!); figures 4 & 5 nicely show the trends for the Affect Scale and the HQS Subscale, but I would have loved to see some error bars. Somewhat related (by virtue of pickiness), Table 3 overstates the degrees of statistical significance among the main and interaction effects. I would have rather seen tables that illustrate the direction or magnitude of the main effects for the different conditions than a huge table of asterisks.

Nevertheless, the paper was very interesting, and I definitely appreciated the implications of their findings for user experiences with different kinds of websites. Enough whining, moving on...

Exploring Campus

Wow, this place is beautiful. Seriously, I am happy I am not in the swamps of Houston or the desert of Albuquerque. This place is lavishly green, ornately architected, and the feeling on campus is great with the Odyssey kids gone (sorry, kids – nothing against you, but the interns get a little claustrophobic in the cafeteria and on the buses.)

Ropes Course

I take back some of what I said about pleasant feelings in the atmosphere. Saturday was in part an insect-filled and sun-scorched annoyance. **HOWEVER**, that is a minute observation compared to the COPIOUS amounts of fun and adventure our intern group had climbing, swinging, and working as a team at the course. My 8 year-old self's mind exploded. I was equal bits terrified and exhilarated. Great choice, REU mentors! 11 of 10, would do again.

Simulations

Speaking of repeating experiences, can I just live in the flight simulation room? Today, we spent several hours becoming familiar with the apparatus of X-Plane and the physics of aerodynamics. If there is one thing I learned today, it is how a jet engine functions and the 4 fundamental forces of aerodynamics: Intake, Compression, Combustion, & Exhaust; Lift, Drag, Thrust, Weight. Here's a funny representation of this:



Literature Review

On Sunday, my group went to the library to work on the background research for our project. I'm focusing on the Human Factors issues in our device: Decision Making, Attention, Training, Multitasking, Cognition in Flight Simulations, etc.. It turns out that this is a very large and complex body of literature that is hard to cover in just 5 different sources! I am trying my best to absorb and isolate the papers that are most important. One of my favorite is called [It Is Not How Much You Have but How You Use It: Toward a Rational Use of Simulation to Support Aviation Training](#) from the Journal of Aviation Psychology. It is a great primer on the differences between high fidelity

simulations and effective training systems. I highly recommend reading it if you want a synopsis of the Human Factors issues for our project. Our group may do a brief talk on it for the Journal Club meeting on Friday, but it is not strictly a research paper, so it will not be the main focus.

C++ Programming Course

To conclude, I would like to talk about our programming course that we started today. I have an intermediate programming background (HTML5, CSS3, JavaScript, R, Python, LaTeX, Markdown), but nothing heavily Object-Oriented. I did not get perfect answers on the evaluation test, but as we walked through my incorrect answers, I was pleased that I was not too far off from understanding the syntax specifics that I was missing. For our project, we are going to try to get a Battleship game to work, but we may consider Simon (the memory game) as a backup in case we run into difficulties.

Okay, I resign. That is enough writing for a Monday.

My fellow interns, you are exceedingly hilarious and intelligent, and I am glad that I am here with you.

Review of First Lab Meeting

Posted on [May 29, 2014](#) by [Mitchell Massey](#)

The last few hours have been very reassuring. After hearing about all of the projects, meeting my lab mentors at DXS (Design for eXtreme Systems), and learning about all of the awesome flight tools at our disposal, I *cannot* wait to get started with our programming & graphics classes and design sessions.

I feel much more confident about my role on the team as the “Human Factors Guy”, and I also hoping to learn enough coding stuff to help with back end stuff.

Fun things I want to do next:

- See the C6!
- Try the flight simulator!
- Fly for real!
- Learn modelling / OpenGL
- Mess with Oculus Rift
- Explore Ames

First Thursday

Posted on [May 29, 2014](#) by [Mitchell Massey](#)

These last two long days have been filled with introductions, meetings, shopping excursions, and exploration. I have been thrilled to find myself surrounded by fun, intelligent, and all around awesome students, and I am pumped to see what the next 9 weeks will bring. The campus is beautiful, our apartments are awesome, our projects are interesting, our teams are well-structured, and our mentors are fantastic, so I am very happy to be here.

Now, if I could just get out of this allergy business...