Matthew Getch

🌐 **projects.vrac.iastate.edu**/REU2014/

13/08 "\n";

Posted on August 13, 2014 by getchm

What This Is:

I'm not writing to the people who were in the program with me. This blog post, my last one is meant specifically for the people who are reading through these trying to figure out what they got themselves into. It's pretty tough to condense all of my feelings about the program into what I hope will be a reasonably small blog post.

For context, so I can offer the most objective advice I have waited until most of the nostalgia has died down a bit.

Day 1:

On the first day really get to know the people who you'll be working with. This means being as bothersome as possible as much as possible. Really push for people to get together, it's going to happen anyway so just push it along. My favorite moments were the unorchestrated ones, you can't force those, but you can get all the pieces together so they're more likely to happen.

Welch:

There's this street next to ISU where they have the best hot dogs. Get down there within the first 3 weeks. Don't put off exploring Ames, it has a surprising amount of goodness packed into it's few streets. The bar I went to was a good time, even better if you can convince some of the grad students to go hang out with you on the weekends.

Caribou:

Learn how to go get coffee. I say learn because in all honesty it's going to feel weird just leaving the office to go do something that feels relatively trivial. Taking this coffee time with your group is one of the most productive things you can do.

Luncheons:

One of my favorite things to do during Luncheons was leave and go lay outside. Stick around for at least 30 minutes of the Q&A session after the main lecture, then go do the lounging thing. Sometimes speakers can surprise you.

Boffing:

There's a boffing group that meets at 6 or 7 on Tuesday outside the library. Skip (or leave early from) one of the socials to go do it. The people aren't the worst and it's a good way to blow off some steam.

The Last Week:

Try and get everything taken care of before then. I met some really good people and working through potential bonding time kind of sucked.

Himself and The Moms:

During the first week… during the first half of the program… during most of the program it's going to feel like you're under a lot of supervision. Trust the adults who have been doing this for the last 9 years, they know what the trends are, how people tend to react. They're working you really hard early on to prevent home sickness. Just go along with what they say, also they're really capable people. Stephen has an air of nonchalance that can be a bit off putting and Eliot isn't actually scary. You really just need to sit and have a chat with them. Stephen has a natural curiosity that is fairly contagious and Eliot is particularly ardent about circumventing euphemism or fluff. Don't let their initial impressions provide any misconceptions.

Soccer:

During the summer I went and played soccer three days a week. See if you can get a group to go, a good portion of the people I met became friends. Also soccer is a good way to get away with messing with your workmates.

That's All Folks:

There's a lot I've left out because I don't think it properly belongs here. If you want to talk about my experience, I'd love to chat with you. My email is *getchmatthew@gmail.com*, make sure you include a subject line that won't make me just delete the email. We can also do skype and stuff, but you should really just send me an email first.

cout << "Bye now" << endl;

31/07 With Held Hands We Raise our Voices to the Air

Posted on July 31, 2014 by getchm

All of the photos I've taken are now on the server where the Baiotto photos are.

I won't be putting any fancy headers or anything here. No more formatting. No more word play. Just go browse through the photos.

I'll add some stuff here to the next REU folks to come through.

In the mean time, I might as well take a last few moments to reflect.

To try and find some insight worth offering.

Then again, I was never all that good at advice to begin with.

30/07 Finding Places Along the Way

Posted on July 30, 2014 by getchm

Finding Places to Dig In:

When I think about where I belong, the place that I've got that I can consider home I picture a small apartment on the street with the garden full of plants. The sound of cars passing by is constant at all hours, the rush of the town seeps in through any crack in the foundation of our small apartment.

There's always the smell of beans. It's the kind of sinking and moist smell you would expect to find in a sauna at the

gym; the smell of sweat comfortably handed over for the homely scent of freshly cooked food. Because of the welcoming scent of food, the small apartment always feels cozier. Somehow the impression of the kitchen paints the entire home.

All of the couches have these cheesy fake leather exteriors, the kind that leave your skin all red if you aren't careful. The creases add a rough texture that gives the impression that someone skinned a punching bag to make the couch. The whole apartment has a similarly rough texture. The old wooden furniture, course. The aging piano in my room, course. The table cloths, course.

My grandma (affectionately referred to as Nani) is a fantastic cook. I'm still convinced her potato salad is one of the great wonders of this world, clocking up there next to The Great Wall and the International Space Station. She was always sure to produce these huge meals for anybody who came through the door, not out of hospitality, but as if to say "I've fed you for the rest of your life, please, never come back."

The inside of the apartment looks vaguely beige. Everything is sort of off white punctuated by the strange colors of wood and a TV. Outside is Nani's garden, a green cavalcade of marching vines and twisted flowers. Underscoring the textures of the green are blooming stouts of color that lay beneath and above the waves of cascading greens. The contrast between the indoors and outdoors is stark and to this day remains the boldest impression of that strange place.

The motivation for this as you might expect is that something very sad is happening.

This idea of home that I have so starkly engraved is losing luster with every passing day. Not just since I've been here, but since my first excursion to college. Soon I suspect that it will be forever a mauve blur.

Recently when I think about home, instead of defaulting to the roots of where I came from, that apartment in Chula Vista, I am instead catching myself picturing the black couches of Freddy instead of the white course one where I slept so many nights. So thanks for that, for making a place I can think of as home, even if it's going to go away soon, I think that memory will sit there.

I'd like to think that I'll need a couch to sleep on and that's where you'll all come in, with a big comforter and some soft pillows. That when we all separate we'll have created 11 other places for us to dig in and get comfortable.

Dynamically Creating Text Boxes:

I really miss working with Javascript sometimes. Creating dynamic text boxes in JS is super easy particularly with AJAX, but in C# it's sort of a pain.

C6 and Sleep is Death:

Sleep is Death is a video game that looks like this.

Players take turns for 30 seconds each doing stuff.

One player is the man in the box and controls the scene. He gets to set the scene and change the scenery and characters depending on what the character in the game does.

The second player can either follow the story laid out by the narrator or try and break everything by just non-sequitiring as much as possible.

It'd be cool to put somebody in the C6 with a microphone and have them enact the players role with someone outside making and changing the scene depending on how they act. If I was a grad student here that's probably what I'd work on.

Can't even tell the difference between that and a real bedroom.
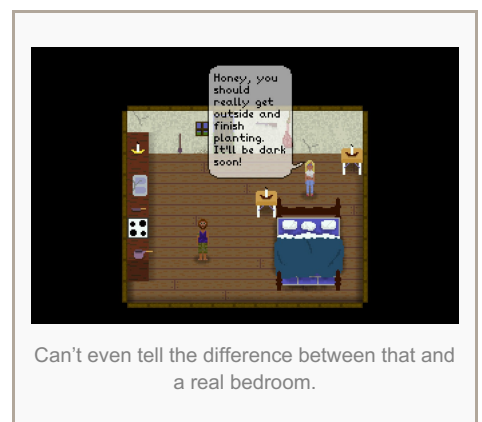
Radiolab Stuffs:

Hey go listen to this radiolab. It's really good, and it's all about how we make decisions.

http://www.radiolab.org/story/91640-choice/

Uh so I guess that's it.

28/07-29/07 Experiential Grubbing

Posted on July 29, 2014 by getchm

Vampire Weekend:

I do lots of pretty lame things.

I keep a dream journal that I sometimes bring out at parties, I really like tennis shoes (sneakers?), banal stuff really fascinates me, Vanilla ice cream is the best ice cream.

One time I had this dream where I saw a bathroom graffiti of some mismatched tennis shoes and I spent the entirety of the dream wondering why someone would do that. If I had looked to the left there probably would have been something exciting but I didn't so I just kept looking into those shoes trying to find some greater context for the shoes as if the painting was left by some masked crusader trying to lead me into finding the missing piece of some great masked conspiracy… There was probably Vanilla ice cream too.

See rambly. Ramblish? Ramblelike?

One of the things I could say though was that I never enjoyed a Vampire Weekend album, but after listening to them today I think it has really grown on me. It's another step in the direction of wearing Urban Outfitter scarves and silly sunglasses.

Code for Days:

I've been working on getting some auto documentation things implemented for when I apply for the MIT open source license. It's really obnoxious but automating the documentation process basically quadruples future development time if anybody wants to expand on the code.

Code has life and can move if you let it. That's one of those open source ideas, the best structure for code is strictly loose. The schema can't be restricting, but it also needs to be loosely implemented so that others can easily adapt to the code and turn it into something for themselves. I'm really trying to do that with the IGA code since our deliverables will be a bit lacking.

To give the folks down on the floor who will have to use this thing a fighting chance I'm doing my best not to rope them into doing anything excessively limiting. RhinoCommon makes this a bit difficult, but nothing has broken yet so A+.

Denny is really creepy. His waffles also sort of suck.

25/07 Sporting One Time Facial Hair

Posted on July 25, 2014 by getchm

Coding in VB:

I have sort of a love hate relationship with interpreted languages.

On one hand they abstract away so much of the awful that hangs around in programming. To be able to do much of anything impressive in programming the coder has to be a master of syntactical compression, which means being a master of syntax. For those who are first coming into the programming world this can be the hardest hump to get over.

Learning the format of good code design, learning about the way to organize ideas, that's plenty daunting. Add in the syntax hurdles and I'm surprised anyone programs at all. *public static void main(String args[])* is dumb. It shouldn't be at the top of a program that doesn't use any of those features.

Now there are lots of people who feel this way (though I think we make up a minority).

"Matz" is one of these people. He made a little language that I have a keen fondness for called Ruby. Maybe you've heard of it. Maybe, if you're lucky you've even used it.

Ruby is one of the most interpreted language because of how it approaches OOP, namely everything is an object. There are no primitive types. If you want to go change the way the integers work you can go tweak the class. More than that though, the syntax is silky smooth. So smooth in fact that at one point it was accidentally almost spread over a particularly appealing apple pie. It only didn't happen because my mom stopped me from trying to rub my Raspberry Pi all over this apple pie. I would have done it though, honest.

Then there's Python. This is where all this love hate stuff really came into play.

I took a Scientific Computation course, python was the goto language there. Python is excellent because it's fast and named after the British Comedy series Monty Python. It has a really robust standard library and it also has one of the most expansive and active communities.

Now there's nothing *wrong* with Python. It embodies the 7 rating. It has OO, but it's not particularly robust. The syntax is clean, but not particularly intuitive. I think Python is okay at best, you should probably start teaching programming here because it's fairly straightforward. It also isn't Scratch making it already a decent language for learning.

Now there's Visual Basic.

I never knew I could hate something so much before.

Sometimes lists materialize of things I'd rather be doing instead of programming in VB, here are a few choice ones from my N++ editor.

- Writing every form of all of the Spanish verbs. All of them.
- Guzzling Mouthwash.
- Trying to tie a banana peel into a bowtie.
- Trying to walk with two chairs instead of legs.
- Eating Raisin Bran. Dry.

- Salt Licks (There isn't even a verb there. I'd just rather salt licks?)
- Write a self-help book about getting over reddit addiction.

Presenting said book at a reddit meet-up.

23/07 Not a Robot, but a Ghost

Posted on July 23, 2014 by getchm

Superchunk:

This band is currently shredding harder than anything else I've been listening to.

Coding:

So I need to write to a directory and I haven't been able to write there because it's in the Program Files folder. After lunch I'll probably try and just create a desktop folder and write there. It's gross though because clutter on the desktop is the worst thing since vestigial gills. I'll try and figure out a work around to the txt writing, but I think that's just going to have to be how the program works.

Button Design:

Alexis really likes Pandas, you should weigh in on whether or not you think Pandas are the way to go for our button in Rhino. I don't actually know what the name of our product is yet, I'm pretty partial to Etch-A-Getch. Don't know how receptive the rest of the team would be to that though.

22/07 Time and Transition is a Wave

Posted on July 22, 2014 by getchm

Debra Satterfield:

If you ever meet her in some wispy street make sure you shake her hand. She's as close to a modern day superhero as does exist.

Even better, try and spend some time with her to learn about the importance of inclusive design. Our goal is not to force the other person to build a bridge to your design, but rather to construct a bridge so that we can understand the person.

Design is the structure on which we build the unifying bonds, language is our most complicated and depth heavy structure. It isn't the optimal structure for communication for all, what needs to exist is a form of communication that extends beyond language. There is no catch all. Instead we should ask for people to build their own concept of communication and we find ways to interpret that structure.

LaTeX:

Some people are pretty indie. They like movies with small budgets and music that's obscure. Some writers are pretty indie, they believe in sarcasm punctuation and metonymy. Some car enthusiasts are indie, they believe in box cars and something called a Tesla Bolt.

Then there are the worst kinds of people, the text processing indie community. They believe in gross things like Writebox and Zenwriter. A select few though strongly believe in LaTeX.

I'm really sorry to say that I fall into this last category.

Dancing on Sharps:

Alexis knows how to do C sharp stuff now. It's super exciting. Also a GUID has nothing to do with the GUI. Don't let anyone tell you otherwise.

21/07 Is it a Foyer or an Antechamber?

Posted on July 21, 2014 by getchm

Words:

The last few days there has been this weird obsession with how words function that's sat against everything that I've done the last few days. This strange period of inquisition is almost entirely because of the last radiolab I listened to which was about how words change the ways our brains work.

In this particular episode of Radiolab there was a man who never learned that language existed. He was deaf, never taught sign language, and suffered from a severe lack of communication skills. If you signed something at him he would just copy the words back at you, making it a bit like talking to a mirror.

A linguist found this guy and tried to teach him to language. It didn't work out all that well. Then she just tried teaching a pretend student. The languageless looked really confused. This went on for days until…

BANG! He slammed his fist down on the table and realized that everything has a name. From that point on he kept a list of names of things.

Soon he was completely fluent, turns out he was part of a group of people that would sit and "talk." They didn't have any concept of language so talking isn't really the right way to put it, but after learning to sign he couldn't communicate with them anymore.

Go listen to Radiolab, it's the raddest of dads.

GUI Stuff:

So making the call to the Windows Form via C sharp is super easy. All that needs to be done now is actually putting functionality on the interface. Then we have to wrap that into some Rhinoscript, which so far is going to be the actual challenge.

Right, Rhino has it's own scripting language that is vaguely Pythonish.

17/07 The Work Episode (False Advertising)

Posted on July 17, 2014 by getchm

Keeping a Theme:

In order to keep a theme going I'm going to try and get through the fun stuff fast, after all this is the work episode of this blog. So in order to keep the theme going…

I casted one of the volleyball games, sufficiently angering both teams I commented on (though I did get some cheery smiles about my fast talking). Then through the karmic might of the universe our volleyball team was trounced. Both ego and spirit bruised our team departed the field in tears, a small trail of mud marking our path to the grass.

There was Broomball which was interesting and further proved that if you put people in a room with nothing to do they'll find a way to make a game out of the walls. Watching was thoroughly engaging and left some warm feelings. The guy I chatted with during the game had some interesting things to say about identity, he being from California also had a vague element of *homo sacer.*

Chenglong Walked In:

I sort of lost motivation to write this. Instead I'm just going to forego the blogging process. There will be a better one tomorrow, or maybe I'll add more later. We'll see.

15/07 Opening Jars With Strange Lids

Posted on July 15, 2014 by getchm

Coffee Grounds:

Like hitting the ground, as in the effect of gravity. Looking backwards instead of forwards, the reaction to cold water, or forgetting to swing the bat, life without coffee feels more like crippling insomnia than ever before.

I think I'm going to cave tomorrow and go back to coffee. It boosts productivity and gets rid of a bunch of the mental fog that tends to coast around my brain parts.

C#:

It's time to get back into the real core of programming for the Iso project.

The monstrosity that is our current Grasshopper file now needs to be converted into nice, clean code. Although I've done my best to keep things relatively neat in the GH (Grasshopper) file, it still looks and feels cluttered. Having a collection of classes will make that whole process look much neater.

14/07 This is Water

Posted on July 14, 2014 by getchm

Reiman Gardens:

There was a multitude of charming statues framed by flowers rhapsodical and fair. Spending time there enabled a sublime feeling of solitude particularly when Alexis and I were able to just sit and talk about nothing in particular. Since we so often work together, our interactions often feel far more professional than I'd like. An unfortunate facet of my work is that it often disenfranchises the opportunity to make friends of my coworkers.

Reiman Gardens helped illuminate that this need not always be the case. As I roamed with Alexis, then Anton and Alexis, it felt like I was strolling about with some close friends, not as one would expect, some coworkers.

That being said, Alexis if you're reading this and not actually working when you're supposed to I'll have to spray you with our house hose.

Nights About:

This was the first weekend where we really broke away from the comfort of Frederikson. For the evenings we roamed Welch Ave and spent time meeting people and getting acquainted with the campus' social climate. I definitely regret putting this off for so long, Superdog (Super Dog?) is such an incredible comfort food, Mr Fajita, even more so.

When 2 rolled around people fled the bars and the whole street lit with the drunken calls and yowls of a living structure. In the soft light of the street there was the buzz of contentment aided by the yearning to continue about life in this fashion. A delusion no doubt, but one case where the wool feels comfortable.

Mariama and I had a moment. It was long overdue and played out like a scene from *Trainspotting.* Having it though did true magic for our friendship though, see the above griping about work for reasons.

Building a Program:

I've got lots of plans for the programming department at Wells. My time is limited, but my vigor is not. There are people willing to help me even while I am abroad and I've never felt more capable of being able to do something big for a place. I think a year is enough time, even though I'll be away for part of it, a year is more than enough to build a program (see wot I did there). Doing this REU makes me feel even better about taking on this challenge.

On the flip side of that I'm going to talk a bit about design patterns.

When you get to play God (programming) there are certain patterns that you should learn to adopt so that things don't break. In algorithms you learn about the techniques that make for efficient compilation. Basically algorithms and data structures are supposed to teach you about how to properly use your tools. Design Patterns is about how to put your creations together.

OOP let's you take actively sculpt the materials you want to build with. Making sure you construct the right kind of materials so that things don't break is the primary goal. Effective and rapid development is another. Both of these things are conferred by properly learning about Design Patterns.

An example, one of my favorites, is the use of the Singleton. The singleton has fallen a bit out of favor, but it's easy to explain and implement so…

The Singleton ensures that only one globally accessible instance of an object exists. The class cannot be invoked again, meaning that there will only be one instance of something at any given time.

Think of the controller of a game engine (model view controller is another patter, shout out to Ruby on Rails). There is no reason (it can actually be disastrous) to have two instances running at a time.

Phil Made a Request:

Phil is the Pizza King. He may in fact be made of pizza. In fact all of the plants in his kingdom produce a different kind of pizza. The Spinach Tomato, Chicken Alfredo trees in the Orchard of Flavor were particularly ripe.

Some of you would no doubt immediately benefit the royal gardener Mitch to the quality of this years pizza bounty. Not so, to falsely attribute the pizza garden quality to him is a folly. Mitch can actually only work in a garden for fruit. I don't know why anyone would want to grow fruit, but alas out of pit the pizza king keeps him around to care for the tomatoes.

Tomatoes which are then thrown at Mitch.

11/07 Bacon Pancakes.

Posted on July 11, 2014 by getchm

Results:

So the last few days have been presentation oriented. To remedy that I've just decided to include the grasshopper stuff as well as an image of our (completed) turbine blade. You can look at it if you want, maybe print out some fliers and hang them around campus to show people.

Look I'm not saying these results are the best thing to happen ever, but if we look at office morale over time, there's a peak the coincides perfectly with with the completion of this foil. The results are statistically significant.

Some might argue that this is a good example of *post hoc ergo proctor hoc.* Those people speak Latin though, and Latin is a dead language, do you want to be talking in zombie language.

No, no you don't.

Presentations:

I would say our group did averagely, on the whole we performed better than we could have hoped for the hour and a half we invested for practice. Hearing about all of the robot stuff was sort of cool, though I don't think I'll ever recover from looking into Baxter's cold dead eyes. I wonder how he feels about getting upgraded murder hands, probably pretty good.

If you squint it looks like Serenity. I mean *really* squint…

Hearing other people's REU experiences really put a bunch of my current experiences in perspective and that was really nice. Plus the whole fear of being alone brought about by being one of the few computer science majors floating around at my school felt less impactful when I was with everyone talking about robots.

Please don't hurt me Baxter, I have a family.

Time:

If you've got lots of it you should watch this video with me.
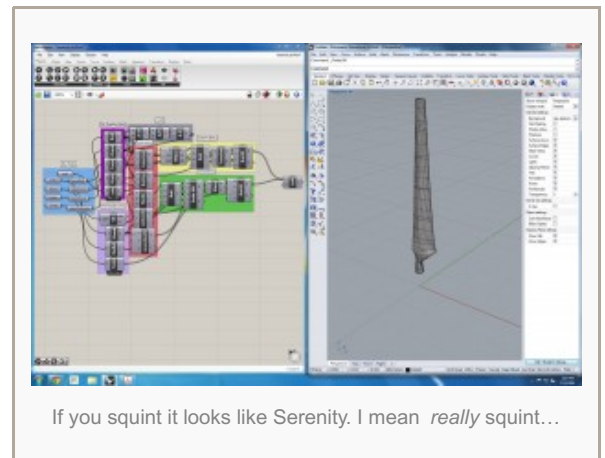
08/07 All Delighted People

Posted on July 8, 2014 by getchm

Domain Specific Websites for the Visually Impaired:

One of the biggest plaguing issues for visually impaired websites is that they're supposed to act primarily as websites that function for those who are not visually impaired. Why are their mobile specific versions of websites, but not designs catered to the handicapped. It wouldn't be hard to build an indicator into browsers that could ask a server for an accessible form of a website. By adopting this scheme, we can have targeted website design that

would easily bolster the accessibility for those who are visually impaired.

Amherst Uni has some awesome resources for web design. If you haven't already scoped them out definitely take some time to do so. Basically consistency is key.

Dynamic Narrative Settings:

The guys over at Supergiant Games (I promise I'll stop shrieking about Transistor and Bastion after this) developed a really interesting timing based narrative driven announcer system. Not only does the announcer deliver messages about the story, but he also offers up advice about how to perform better. Delivering dynamic vocal cues inside of a catered website experience (think ITS, but in browser) is the best tool we have available IMO. I'll try and brainstorm some examples of how this could be used for next blog.

Grad School Talk:

The speakers were genuinely enthusing today, there's been a distinct fluctuation in the quality of the speakers, particularly for the workshop. Having the two fantastic speakers today really helped remove some of the stigma around the workshops. The talk was excessively informational.

In particular I learned that looking for a grad school is really more about spending time looking for a professor that fits your interests. It's not just an undergraduate college-student relationship, but it's actually a bit deeper than that. Something I'm totally okay with.

On the down side, the sense of urgency conveyed was a bit discouraging to me. I recognize this as a personal problem, particularly since I'm going abroad next semester it would be extremely difficult to get my life in order. Mitch asked about his senior status, she said it would be tough, but not impossible. I have half as much time as him.

It's gonna be a fun year after this…

Five Best Emoticons:

💡

😳

😎

😲

☺

07/07 Double 07

Posted on July 7, 2014 by getchm

Camping The Experience:

There are sometimes events that are despondent to being described via language. The camping trip was one such an event, it was not so much the events, but it was actually a culture. When you wake up in the morning the way you think of yourself, the drive to eat breakfast, your particular attitude on lakefront property, all of that stuff is partially predetermined by the culture you wake up in-

waking up with my camping mates created an ideal culture.

Everyone seemed perfectly enthused, the type of excitement that is tangible yet leaves room for addition. At no point

were any feelings overbearing to any particular party. Instead there was a melting pot of just general contentment from which every person, plant, item could sample a bit of contentment.

I remember waking up really early on Friday, taking in the sounds of abrupt snoring (a crime that I am guilty of as well) and just getting the sense that things were okay. The tent was covered in sheets, with the inside being vaguely reminiscent of something a pomp adventurer would furnish their tent with. Above you there are fireflies trapped between the outer cover of the tent and the roof of the tent. The light softly illuminates the inside of the tent so that the mystery of the dark sits against the bulwark of the soft green light. The air has the musk of smoke and woodshop, the sawdust meeting the smoke. I could get a bit deeper with the snapshot, but I'll cut it there. Just understand that it was home and homelike, the security, warmth, and gentleness in the air permeating deeply into the future reservations of all involved.

There was hiking, fishing, marshmallows, singing, all kinds of nonsense. There are photos of that stuff, and someone else might be able to fill you in. I don't want to. Some of those things I would prefer be kept inside, for later so that there might be a way to prescribe a bit of raw contentment to the bitterness of the everyday.

Is what I would say had it not been for the inevitable. On Saturday night there came a crawling noise from outside the tent, the slithering of tendrils as they dragged across the nylon. The familiar sound of rain on a canopy, muted by the encroaching masses. By flash of lightning they grew more, completely overtaking the tent, leaving the only exit unmarred. Holly ushered out, her burst of speed muted by the sudden halting of flesh, a snap, and finally a muffled call, "join us." We had been overtaken by the over mind, unified in glorious flesh by the all knowing suckers. The hive beckons to you all now is it had beckoned to us, become one with our mass, and we shall all kneel at the alter of flesh.

4th of July:

Holly's parents are fantastic. There is no limit to the quantity of both good deed and merry entrenchment within their home. The canoeing was so much fun, Phil's yells piercing, the warmth of both friend and food welcoming. We took a pontoon ride and it was all at once overwhelming and beautiful. If there had been a picture of America at its finest it could be what we saw on that boat ride.

Fireworks are a superbly meaningful. The only time my family ever got together was during the 4th, when that time had passed the fireworks signaled a candid moment of communal appreciation between friends. It's been a full year now since last 4th. What an incredible time, both then and now. The fireworks show was lacking, but it was made up for with dumb accents, sudden 2D awareness, and the soft lion's mane of Phil's head.

BTW there were like 3 elbows I got.

That's all:

Come ask me questions about it, the whole trip was as good as it gets. Maybe I'll put pictures up here later.

02/07 So Long!

Posted on July 2, 2014 by getchm

And thanks for all the fish! (in 150 minutes)

Actual Blog Content:

I'm excited to leave the project where it is and head off on what I'm expecting to be a super relaxing vacation. Gosh I wish I had my hammock, all is well though.

We successfully created a turbine blade and have divided it into parts for reassembly. What we need to do now is further divide the lower and upper sections of the wind turbine and convert them into NURBS patches. As of right now they're polysurfaces which are not analysis suitable. With some work though we'll be able to convert them and establish the script to do IGA. We also need to generalize the steps to construct the geometry. All files within the code are hard coded with the exception of the turbine blade components which are pulled from the NREL text doc. This format is cumbersome to a user though. Our whole goal is making this process approachable, that's the real challenge here.

01/07 July, July!

Posted on July 1, 2014 by getchm

Never Seemed So Strange:

It's July now, there's mounting excitement for our trip out into the wilderness to reenact 127 Hours, hopefully I get to be the rock. More than that though, there's apprehension at the dwindling time I have in this office chair. I messed up, I really did something bad. Before anything could be stopped, I found myself in the 2013 REU section reading some of the old blog posts (*Why aren't you working?* Because Grasshopper forums are slow). It sort of forced the reflective aspect of this whole program, made the writing part of me want to get something down.

I've said it before, but never in a really permanent way. If you're reading this from next year's program these last few weeks have been the happiest in a long time. The people here are a treasure, the conversations alone are worth the cost of admission (a paycheck and what will probably be some painful until next times). Your group will most likely be different, the people may not *all* click, the odds might be odder, the social may be more social, the silent may be quieter than you'd like.

For those that you don't get along with very well you get a chance you'll never get again.

You can welcome that person if only for a few moments into your life.

Maybe, you'll get something out of it, I know I did.

Too bad it's ending soon. *queue exit music*

As to those who are here with me, this is the last time I'll bring up how short lived our time together is, it's far too sad. With the World Cup going on, selfies to be taken, luncheons to sleep through, disciplinary conversations to have, and the lovely amount of programming that needs to be done, I doubt I'll have time to be reflective like this again. Thanks though, I'm still happy to be here, all of you are important to that end.

When it's all over maybe things will become a bit brighter in my head, I won't remember the hours spent wishing lecture would end or the missing semicolons. Only the better things will sit at the forefront of the experience. Wouldn't that be idyllic.

And I'll say your camisole was a sprightly light magenta When in fact it was a nappy bluish grey

In Other News:

Geez, sorry, don't know where that came from. Too much brooding music, time to switch off to the chiptunes.

Our Grasshopper code almost works, it duplicates each NURBS curve after each transformation which is not ideal. On the bright side, I think the other's are getting workable results, Mariama is prepping our slides for the

presentation. It's gonna be the best one because we're going interactive. Lit reviews are nice, but results are where the party is at. Just gotta iron out this last hiccup.

Visual Programming:

Is not the answer to making things easier, if we're gonna put people in a box we might as well make that box good for easing the transition into an actual programming language.

Computer Science is literacy, we teach kids to read by giving them easy engaging stories with lots of cool pictures. Now we just need to make a programming language that does that while also preparing them for the challenges of C or god forbid, Java.
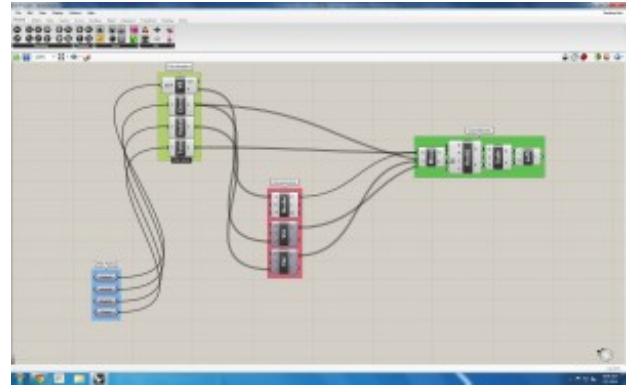
Scratch is bad and it should feel bad. Grasshopper at least has redeemable qualities, like being colorful and almost fun.

Gotta Add the Transistor Song Because It's Really Good:

30/06 Hello my Lover, Hello my Darling

Posted on June 30, 2014 by getchm

ISO:

We have a mission, we have a plan, we have the tools. There is nothing stopping us from presenting something cool at the mid project presentation. Our team growth has been astounding, this is not to be understated. Despite all the little frustrations I am incredibly proud to be on a team with such

Literally the worst.

accommodating, capable humans. Also 4th of July weekend is really just the best way to keep motivated. Just be a train, never stop moving, and for God's sake slow down when you enter cities.

4th of July:

This'll be the first 4th of July away from home. It'll probably be the first one without fireworks too. The sensation is somber, but the idea of doing something new is a bit scary, but it'll probably be good for me.\

Tornado Watch:

Everyone is fine, nothing is wrong, please return to your previously scheduled work day.
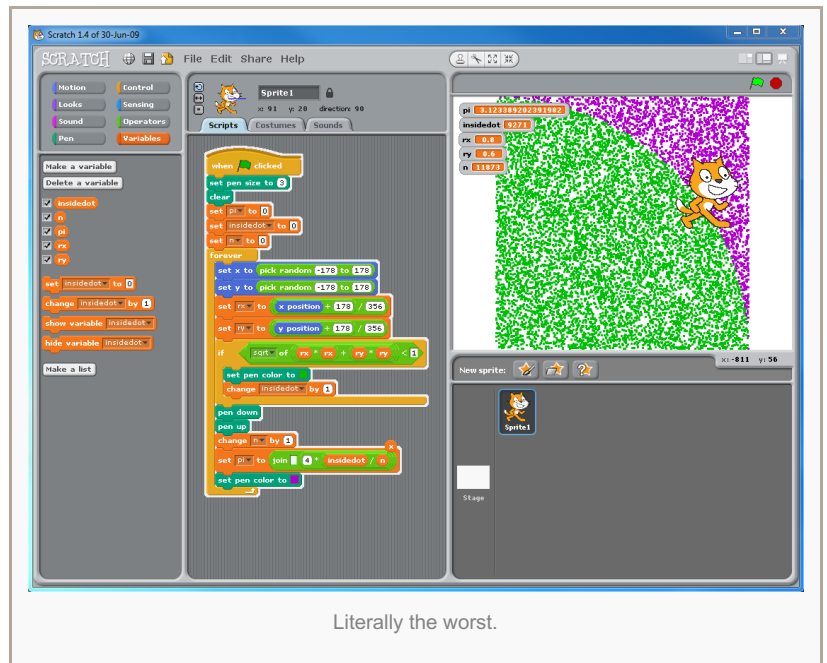
27/06 That Time I Disappointed Phil

Posted on June 27, 2014 by getchm

No Audacity:

I can't cut and edit the audio as well as I'd like because I don't have audacity. Chase was kind enough to offer up his computer for use, but I can't install things unless he signs off on the install, until then all audio and stuff will have to wait so that we can work past this issue, in the mean time we return to your regularly scheduled blog post.

The Philliberto 5:

Game night is an idea that encompasses like 60 percent of what I enjoy. Not only do games make people trust each other, but they're also excellent for teaching team building and being nice about things. Playing Scott Pilgrim with Mitchell was awesome, getting those sick nasty aerial combos on the big dudes was a great team building exercise! Plus the music in that game is awesome, *Another Winter* is one of my favorite chiptune songs of all time. One thing that did happen that made me sad was Phil's Jigglydoof in Melee. He 5 stocked me, which means that in the duration of our match I wasn't able to do anything to him. Definitely a kick in the ego for me. One of the big game night things we did at Wells was *Risk of Rain*. RoR is a game about respecting nature and existing within a complex environment that wants you dead, it's about winning, surviving, and losing a piece of yourself in the process. Much like Dark Souls, you fight work doing what you think is right only to realize that you're the villain in the end. Sam spent the entire game on a rope.

Work Progress:

We have a lofted turbine blade. Get out of my house.

Journal Club:

Seminar style discussions are excellent for engagement and information retention. It turns out when you ask people to synthesize ideas and they can do it, they learn so much better than the traditional lecture format. Team Tutor(Dynamics) did an excellent job facilitating this style of discourse much to everyone's benefit. Not only was journal club productive, but everyone seemed engaged in the topic.

26/06 Posting Things Last Minute So I Can Pretend I Did a Blog Post

Posted on June 27, 2014 by getchm

Today we watched a soccer game which was fantastic and I talked to Chase over a microphone. All of this so I could make today's post fantastic.

25/06 An Audiovisual Cavalcade for your Corneas

Posted on June 25, 2014 by getchm

Okay I lied about the visual part. By the way if you find yourself around the 3532 area I could really use a back massage, the weight lifting with Alexis has not been kind to me.

Also here's the audio I promised.

https://wordpress.vrac.iastate.edu/REU2014/wp-content/uploads/2014/06/export.mp3

24/06 That Time we Talked About Education

Posted on June 24, 2014 by getchm

Coding With Conviction:

Most programmers have dealt with the 90/10 problem at some point in their lives. They might not know that it has a name, or even what it is, but on any programming project that's longer than a few hours the 90/10 problem becomes a serious issue.

The 90 represents most of the coding that has to be done for the project. This stage of the development process and is actually one of the least time consuming stages of development. Now, that last 10 percent to get a finished, polished product, that's the stage where things get awful as a programmer. The visible results are small and any benefit is incremental at best.

A teacher at my school, Professor Moore, is really into overcoming this barrier, this tau comes from him. Whenever students need help with something he makes them work through it on their own, he sits down and tries to walk them through the process, but ultimately it's up to the student to conclude their own answer. I like to think he's trying to teach them how to have conviction to a problem, to see it out until the result has been fully realized.

Whenever I feel like quitting on a bit of code that makes me want to take up Critical Studies, I like to think that he's sitting somewhere in the room silently judging my conviction to the problem. It helps me code with conviction, to devote myself fully to a problem. It also helps that Prof Moore has the most magical eyebrows, he can't hide his enjoyment or lack of because of how expressive the caterpillars perched upon his brow are. Makes him seem a bit less intimidating.

Feeling Terse:

Yesterday I was feeling awful, sorry if I seemed disjoint or whatever. I couldn't really tell you what caused it, but getting out to the gym was a welcome reprieve. Having Alexis as a sparring partner was a delight, plus after he bore the brunt of my ranting he showed me how to do some stuff with weights. Oh man I don't think I'll ever be at 100 percent after that intense chest workout.

Apologies for any inconvenience this may or may not have caused.

Mongolian Buffet:

So Anton found the best place. They take all the florid complexities of Mongolian barbecue, now simplify it into buffet format. It's not even the most expensive thing in the world like it should be. Going to celebrate Phil's birthday was astounding, he had the cutest safari shirt on. I wish I had some photos to share, oh wait....

Too lazy to rotate

Writing an Interview:

You know what's hard, writing interviews. I didn't think it would be so tough, but coming up with complicated and deep questions that require an element of thought is difficult. I've been trying to think of how to best approach stuff like that and it's been interesting.
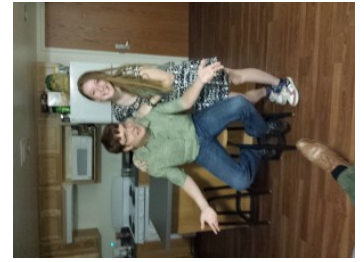
If you want to get interviewed let me know, I can't promise anything will become of the material, but it'll help me learn to mix audio once I collect some audio samples.

23/06 The Parting of the Sensory

Posted on June 23, 2014 by getchm

Exercises in Futility:

Unlike with math and very much like physics, programming requires a particular long winded attention to detail. There are entire books you could read about program structure and will have almost no code in them, OpenGL reminded me of this. Though this time things worked out a bit better and we got something pretty after having messed around with a ton of the internal bits. Someone helped me bridge the gap between the pyramid model. I would say who it was, but I'm supposed to be actively making their life terrible, so I'll just hold off on the praise for now. In any case we got something that doesn't look terrible and there are a clear few steps if I wanted to build on it.

Chasing an Interview:

I've got an interview with Chase Meusel on Wednesday, this means that I have to get a bunch of questions together and prepare for what might turn into a disaster. The fact that I have to record on my chromebook kind of sucks, but when I get my computer I'll be able to sit down and use audacity to actually update something. That means I should probably finish working on my website, which means redoing hosting via AWS, which means… sad Getch. Hey at least it'll look nice in a portfolio, right next to the Rhino plug-in that we're making.

Phil's Birth:

In the protozoan baths that sit along the the edges of volcanoes a single bag of proteins began the process of growth. While many scientists side with this hypothesis, many don't know is the name of that progenitor. If one were to ask how it wished to be called then it wouldn't say anything because it wouldn't have a mouth, but hard coded into it's DNA is a single name.

A name that would change everything, a name that could be scrawled against any backdrop to incite humanity's flippant disregard for the natural state of ignorance; Phil. Even then, small red hairs we're sprouting from its gelatinous body.

Millennia later he bides his time, waiting for the day when he might be able to prance about, his proud red mane flowing in the wind. Thousands of other Phil's also standing in proud exuberance on a statue they themselves erected. A statue that so grand that it towers over the United States, casting a shadow upon the dispossessed lands.

Even now Phil's comeuppance is upon us, his offspring grow hungry, his plans lay idle no more, the turn is upon us. Hide, bar your doors, run from this place lay barren with sacrilege, for this hour belongs to Phil, this land belongs to Phil, and this epoch belongs to Phil. It is no longer the age of human superiority, we cast down our arms in hopes that we might be able to find a place in this world. I suspect though that The Phil has no place for us in his utopia carved in the cliff side of the continental US. So for tomorrow I hope, that a day might come where this ever biding war may cease.

Happy Birthday Phil.

Making Things Look Good Because I Don't Know:

I spent majority of today organizing the structure of the code so that it's easier to read. There are patch and release notes, with a rough outline for milestones. In addition I've also written a few tests to demonstrate the breakdown of an airfoil shape as we remove control points. What's left to do now is get a list of curves and loft them. We're going to need a custom knot insertion algorithm if we want absolute precision within some tolerance, I've got an idea of how to make one using the tangents at points along the curve, basically the more curvature at a point the more knots should be put at that point.

20/06 Fire it Up

Posted on June 20, 2014 by getchm

Project Progress:

Yesterday we met with the two most powerful people I know in the realm of Isogeometrics. Ming-Chen and Chenglong sat on the other end of an ever lengthening table, the boughs of wood seemed heavy under the draconian fists of our handlers. I slid my paper across the table nervously, my work being criticized even before it had arrived. A wry smile spread across the wizened face of our superiors, "this is progress."

Yes, the development process is officially under way, I've forked the rhino common repo on GitHub and have started talking to some of the devs. I'm really excited because as soon as I do some debugging I should have an in and could potentially intern for them. They seem like nice people and I could work from home. A+ job benefits in my opinion.

Lectures About Curves:

Alexis and Mariama performed brilliantly during the lecture, it was the first time we really intuitively came together to create a proper mesh of material as a collective; when things like that happen it feels really nice. A respectful culture of mutual understanding is the most powerful educational tool available to a group, we sold it, they sold it. That being said there is always room for improvement, if you have any comments or concerns let me know so that we can make the next one even more exciting.

Also if you would like to see more a of a shift towards an isogeometric application regarding any field let us know, we'll try and pick something that incorporates that discipline.

Sticking Fingers into Sockets:

I inquired about Digipen for grad school, it's the first really big step towards the entire process that I've taken thus far. The stuff they sent me was incredible, and despite the overwhelming sense of purpose conferred by that booklet something felt right about it. I don't know if it's for me yet, but I got excited about education for the first time in a long time. Also the massage train going on in the apartment helped null the stress a bit.

Iso Summary

Posted on June 19, 2014 by getchm

https://wordpress.vrac.iastate.edu/REU2014/wp-content/uploads/2014/06/Iso-Analysis-Summary-1.mp3

19/06 That Time Earth Was Upside Down

Posted on June 19, 2014 by getchm

OpenGL:

So there has been an unfortunate amount of half doing things, or not really getting the polished product. The commenting minimal, the code disorganized, the methods a bit cheap. On the bright side all results have been pushed in absurd amounts of time. There's never been such a push of productivity in the coding game that's come with such a detriment to just general style things. To any programmers reading this, style is the most important part of your coding habits. Agile development is dependent on a common language amongst a team, this means concise comments *where needed* and clear variable names. One of the best bits of writing advice I've ever gotten was about breaking up block of text. The Berlin Wall was bad, so is that wall of text. Break up code into related chunks.

Another quick tip (see, breaking up text) a big part of coding is just figuring out where to add a particular element. Being able to identify the correct paragraph to add to is super important and is often neglected. Your main function is probably not where you want *that.*

I left the Earth texture upside down in that last coding run, if anyone asks it's an artistic statement.

Luncheon Lecture:

The educational stuff was really interesting and I absolutely want to know more. His lecture wasn't focused on that though, oh well. I'll take the small victories for engagement.

Craft of Research:

Over at SRC we had a similar class on resource collection and data analysis. It wasn't well received then, and I think a similar reaction will occur.

18/06 A Momentary Day

Posted on June 18, 2014 by getchm

Cheesy Titles:

I couldn't think of anything else to throw up as the title, it just felt right to try and capture the flow of today like that. I woke up after not really sleeping all that well and kind of somersaulted my way into the office right before the lecture began, then coding happened I think. At one point there were visions of semicolons and teacher brackets, but before any grasp on the reality of the screen could be swallowed there was this urge to stand, then lunch happened. That was one of the more vivid imprints on the ebb of time today, a temporary reprieve before being rushed off into a three hour class on statistics. That went by in a blur, albeit the rushing had the distinct impression of being

impertinent.

Stochastic:

Randomness is one of my favorite concepts. In order to have a form of randomness that is truly random the distribution should be completely even. In Cryptography we use this idea to obscure information, to be as unpredictable as possible, but to maintain this distribution we have to rely on the absurdly complex structure. When most people think of random they think of chaos, but that's lame. It's like describing *Guernica* as a painting. You aren't necessarily wrong, but you're missing the point entirely. Randomness is the beautifully complex attempt to capture the unpredictability of a predictable system. We are imposing order to derive the compliment. The results are the east syntactically interesting results, it's an absurd amount of work to get no interesting result. I don't want to get too philosophical here, but pseudo random generators are the ultimate validation for the struggle to find meaning. It is ultimately the machinations that produce, even if the product seems empty, the machine is chocked full of meaning.

I know what mean, median, and mode are. So besides actively avoiding error bars and remembering to say I don't know in court, there wasn't a whole lot of benefit to sitting in that 3 hour class. It feels more detrimental to the project progress than beneficial. I wish there was more discussion regarding numerical methodology, had we been in a class with him all semester it would have been a fantastic class. He takes great lengths to ensure that there is some memorable analogy to connect his information to your life. This method is slow though, what we needed was an unending barrage of fact, what we got was a sweetly taste.

What Happens:

I guess I can spend some time working on the plug-in, but every part of me just sort of wants to go. The day feels over, and much like the Disney ride *It's a Small World* it feels like the end is going to feel as long as the entire period leading up to it. Kind of puts the whole 99% protest in different context, this one regarding time. I guess that's a joke, to really get it you have to picture a bunch of clocks sitting around talking about striking 5. They also all need to be wearing robes and smoking wooden pipes to really get the image floating around right.

17/06 Yelling and Whispering, a Musical Told in Chapters

Posted on June 17, 2014 by getchm

Microphone:

The podcasting microphone is in. Come by for an interview sometime and I can put it somewhere cool like on a website or something. After the day ended yesterday I spent so much time just messing around with it and was super impressed at the quality of the microphone and the ambient noise produced by our air conditioner. Definitely want a better recording environment.

Oh uh I recorded the rest of it.

https://wordpress.vrac.iastate.edu/REU2014/wp-content/uploads/2014/06/17-06.mp3

16/06 Sons and Daughters of Hungry Ghosts

Posted on June 16, 2014 by getchm

Hiking, Bridges, and the Rushing of Wind:

Thereupon we found a narrow stone stair which beckoned our yonder bodies forth. With the clicking of soul against stone the ascension began in a frame most understandable and slow. As the ascent continued the reverent stone gave way to muddled path and treacherous root, a framework most unenviable for one of our collective. He sat and nursed his aching extremity, his face shown of admiration and fierce determination, but his mortal coil gave way to this route. Later we would hear of his sound exploits in the field of trapping, from the words of the native, our colleague had been said to have, in his lone efforts, trapped the meal for our entire party. A youthful lot, this feat is mired by all who approach the discipline, and for the humble hands that march these keys there is but no hope to approach such exuberant skill.

The path we walked buffeted on both ends prior by the dancing whirls of nature's folly trod deeply into the imaginations of both younger and older who transpired its weary course. A trail begrudgingly beat into the mark we had set foot upon now making twice the time as we heard the approaching priory. If only to avoid their contemptuous glares we set upon the main road exiting our narrow path. There we came upon our first major choice. A shallow body of water lay to our right, to our left lay the beaten path. As our collective departed into the ravine where lay the water a number broke off wishing to avoid the muck a sinew of the trail we chose. With one foot lay upon water the march had been decided. This would be the chosen course.

After many an hour in those sacred wood we departed to a fine location etched solely by man's hand fixed to the culpable earth. A bridge both long and narrow that overlooks a sweeping snake that cuts into the green of a summer Iowa.The arches immediately conjure images of grandeur and adventure, the whipping winds beckon the days of my seafaring life. A prepared hand, fixed upon the rail and gazed out upon the land, then taking in the adorned beauty of the flowing rapids I knew that excitement would be exonerated by all arbiters who matter. A sirens wail did crawl from my throat growing quickly into the caw of a bird who, upon discovering he is not caged is aghast at the freedom prescribed to his corporeal frame. In that moment I swear I could hear the rustling of the wind echo back, as it so often does, the sounds of a warm home waiting. This was the peaceful epiphany that hung over in the days since, a gentle reminder to offer providence an appeal of sorts. This was all part of me now, and would be so for a time.

Okay enough of that:

OpenGL works almost exactly like Swing which I know from my first real CS class. Of course swing is the actual devil incarnate, OpenGL doesn't seem much better, but at least it's new. Swing once familiar is very powerful, but nothing looks good. Everything has that cheesy Java sheen that makes me slightly uncomfortable. I'm excited to use it for something though, maybe I can sell my team on a game, but it might be better for my health to just do something a bit more tame. I think from here on out I'll focus explicitly on project stuff, which means all class projects are gonna get sidelined after lunch. Sorry classes, this C# isn't going to write itself.

13/06 Screen Falling Off the Door

Posted on June 13, 2014 by getchm

Feeling tense:

I don't know what it is today, but I feel excessively tense. Things just don't feel right and I can't pinpoint why. I think I'll just be a bit on edge for the next few days, maybe I should take some time after work to just be alone. Maybe that's the issue, I haven't had just alone time in too long. It's starting to negatively affect my interactions with people which is the real problem, the last thing I want to do is make someone feel bad, but sometimes it's hard to tell. Usually this type of thing happens before a stout of depression.

Maybe the issue is that it doesn't feel like we're really clicking. As a group things feel forced, even painful sometimes. Maybe that's a personal issue, in fact 100 percent it's a personal issue. I had the same feeling when I

first got to Wells. It'll probably be just today, tomorrow everything will be alright again, that's how this feeling works. It isn't caused by anyone, it's not an issue of offense or anything like that; sometimes this anxiety just comes and it highlights a number of the everyday frustrations. Tomorrow's hiking trip should be good.

World Cup:

It's going on. Mexico won today which is really nice, I definitely reacted a little strongly in the eating place. It's gonna be nice being able to watch some of the games, though I'll likely have to miss some.

Modelling:

For our modelling project we're all making friendship rings which I'm pretty excited for. We all get to lay the face of the ring with a custom design of our choosing, Mari is pulling double duty on this and also designing the ring base. Thanks to Mitch for giving us a model on which to build our emblems of sentimentality.

For my part of the project I chose the city crest from Bastion. I've decided to void the rope as part of the item because ropes are hard and I do have programming to do. I'll go ahead and include the box in the center, then I want to write something inside of it. I originally thought about our names, but a better idea is to compromise and write something from the game that describes our group. I don't know what to throw on there though.

That game is also gorgeous. If you haven't played it or heard of it check it out, the narration is fantastic.

Code Updates:

Alexis just figured out how to read from a file. This means that we can drop that in and read the data points in after we connect the file to an array. One step at a time. I'm working on building the draw function, I have a foreach set up (foreach being awesome). The list structure we're using as our array functions as a dynamic array so the user could realistically put in any number of points and still get the wanted airfoil.

12/06 Hands on the Steering Wheel

Posted on June 12, 2014 by getchm

I'm going to default to not really responding in favor of accomplishing some work. I drew a curve using C sharp in Rhino this morning. We're 3d printing friendship rings. I played soccer yesterday.

Bastion is pretty

All is well.

http://web.ics.purdue.edu/~drkelly/DFWKenyonAddress2005.pdf

11/06 Peas and Queues

Posted on June 11, 2014 by getchm

Why Etiquette is Dumb:

I'm a computer scientist. I like building programs effectively and in a way that's easy to understand and build upon for others, how does my fork use reflect upon my ability to do that. You can mention that they want to get to know us, but if that was the case then they wouldn't want to see the etiquette version that's far too polite.

If they really wanted to get to know their employees then they would do something they wanted to do, maybe like an interview zoo trip. I would go to convention with my potential employer, show them how good I am at time management and being patient within a system. Now eating at a restaurant and pretending like it somehow offers some glimpse into that person's character, that's revealing. It says that we can't get to know each other, it says that for some reason you hold some kind of greater power over, it says that we can't be happy together or be friends for any other reason than to make some product.

I get existing within a corporate structure. I just don't understand why we have to sacrifice the parts of us that are worth living for to do so. To quote Randall Munroe, "(I don't want to) hold back for fear of shaking things up."

It's funny because the comic has swear words in it so I won't post a picture, but I will give you the link. http://xkcd.com/137/

C# and Rhino Common:

The project is now off to a running start, today I'm going to learn to read from excel files and establish control points based off of the figure drawn in Rhino via C sharp. By the end of tomorrow we should be able to do something close to the desired functionality. Maybe even be able to get an airfoil.

10/06 Smooth Peanut Butter Curves

Posted on June 10, 2014 by getchm

MTG:

You know what's awful for productivity, card games. What was supposed to be a proper night of maintaining a clean room turned into a lengthy game of Magic, which although fun, is not what an adult makes. One of the things that's sort of terrible about being obsessed with game design is that you start noticing things about the structure of games. The **TCG** (trading card game) model for instance is directly tied to addiction, an addiction that is currently making me feel a bit more heavy than I ought to at this hour.

Solid Works & Modelling Challenge:

So far the SolidWorks experience has been alright. It's not *quite* as good as programming but it's definitely a step closer than I thought it would be. One of the really cool learning moments I had was this clicking about the methods of accomplishment, a predefined pathway for doing some task, in the CAD software. While reading off of the design for the clamp having a clear set of *internalized* instructions made digesting the 2D figures more palatable. I might stick around a bit and try and get that steering wheel done, but ah well.

Anyway CAD is easy you just have to follow this short **PSA**!

P is for the plane, where things happen. You want to know what's going on where, *remember context is important,* you wouldn't want to start playing charades during a funeral (there's one case where I can think of a counter example, but it involves grand schemes to steal money from high stakes funeral gambling). Your plane is the location and reason for a shape to happen, make sure you are where you want to be before you start doing anything surfacey.

S is for shapes which are how we shape the grand image of our mind's demand. Begin with the base shape ideally

one that can be shaped into what you need it to be. Then cut. Cut like you're starving and found a collection of coupons for free highly nutritious granola. Make sure with each cut you make sure everything is at the correct dimension, consistency is key to a good souffle(or dryer clip).

A Okay so I sort of rammed action into shape and I'm going to fast to stop and fix it. Just know that shape selection is important enough to be its own letter and actions is something entirely different that also deserves its own letter. If you need examples of actions, think of verbs! You can run, walk, climb, eat, swim, write, whatever. If you want CAD based actions think of cutting, adding, expanding, and doing that thing where you pull a shape out of a plane the same way a clown might pull an endless supply of handkerchiefs out of his pockets.

That's all I'm doing today, you don't get any photos. Don't stay up late playing card games, you get lethargic.

09/06 What Happens When you Put a Bunch of People Together

Posted on June 9, 2014 by getchm

Farmer's Market:

We got rained on. ▨

It was actually wonderful, like someone took a bunch of my favorite things then crammed them into one slightly wholesome outdoor experience.

Learning From 2048:

On it's own 2048 is not an educational or worthwhile game to play. The mechanics are simple and innately addictive, which I guess is a worthwhile element to study, but as someone who thinks games can be used for so much more it's a bit saddening.

I'll tell you one thing though, failing horribly at putting it together was really a learning experience.

First off never ever, *ever,* use getchar for user input. What should be fairly simple is actually cripplingly complex. The arrow keys actually return 3 bytes of input, two of which are junk. It would be fine if the issue was documented, you could just clear the buffer and life would be good, but it's not something people use. So it was sad.

Secondly, program correctly from the beginning. The hack job I put together quickly became messy and confusing meaning that I couldn't task out as well as I would have liked.

Finally, 2048 is a surprisingly complex game and is well designed. *But Matthew you just said up there…* I know, but getting the randomizer to work so that exactly 10 % of produced blocks would be a 4 block was actively painful. Now let me be bitter about stuff.

Game Night, the Park, and The Curious Firetruck Incident:

We had a game night at my apartment, the apartment didn't approve at first, but after some coercing (promises of a proper decoration job) it finally agreed to house more than the 3 of us. Though about halfway through the night it started to complain about the potential scuff marks on its nice wood floors. The floors aren't *that* nice, so no big deal. I just think that Rosie (worst named apartment ever) is a bit jealous we're starting to branch out.

Met some fellow interns at the park, just in case they find this blog I'll say they're delightful and that we should have a union thing soon.

I think the old firetruck in the park is haunted. I saw some kids playing on it and when I turned around the firetruck was carting away with them, I'm not saying they were abducted or anything, but I haven't seem them since.

06/06 …We Came Here to Disappoint You

Posted on June 6, 2014 by getchm

2048 Update:

So the game is like 70 percent done, but as any experienced programmer knows, the last percents take most of the time. I don't think there's a proper name for this phenomenon, but at times like this it definitely feels like it should be called "The Worst Part of Anything Ever." Of course I'm a bit biased. That being said if I compare it to the "twist" end of The Happening, Meatless Mondays at Simon's Rock, and accidentally buying milk that's about to go bad, all of those are actually *better* than this part of any project.

The big issue, and the thing that I thought would be most difficult, is checking to see if the tiles next to a tile match. Then we can remove the tile opposite of the direction pushed and double the value in the direction of input. After this happens once the statement breaks then looks at the next tile. The order of the check is also important and requires some interesting for loop stuff. I'm going to work through that bit of code which Mari wrote based off some instructions I gave her. Alexis is working on randomly spawning tiles. Caro did all the board drawing. Except there are prizes on the line…

Light Painting, the Musical:

So if you take a camera and ask it to take a long photo you can abuse the exposure length by using glow sticks to draw. This process is creatively referred to by our mentors as "light painting." Of course we did a slew of nonsense drawings followed by team drawings. The whole process was excessively exciting, maybe it's because I don't like cameras too much and abusing them to make art feels appropriate somehow…

The weirdest part is when everyone began taking on character roles from *Three Penny Opera.* I don't think anyone here has seen it before, yet they all knew the songs and the blocking patterns. About an hour into light painting everybody got into costume and began acting out the play, then right after the final wedding scene in the stable everyone started looking at me expectingly. After 10 minutes of this they started hissing, got out of costume, then immediately resumed doing light painting with no memory of what happened. The costumes mysteriously *disappeared.*

Versus 2048:

I thought it would be cool if there was a version of 2048 where people could play against each other… If anyone wants to help do that we could probably throw one up on Github pages in like an hour or two.

Dungeons & Dargooons:

We still need at least one other person willing to give up an hour or two a week to play, let Phil know as you'll be doing both of us a huge favor! There will probably be snacks (if you know what I mean).

05/06 We didn't come here to rock…

Posted on June 5, 2014 by getchm

Making 2048 *the Wrong Way*:

So I drafted up three essential objects to the game's inner workings aaaannnddd I sort of think it might cause my computer to catch fire. What I really need is someone to walk over and criticize or complement my code. Usually I'd have at least one other person on my team who can stop and say that I'm being absurd about something, someone

who can manage the technical aspect while we look at the lower end needs of the game. Someone who I could switch off with to that effect. I do have the nice liberty of having a programming team that is anxious to learn. This may work out to be the best benefit as I can dump a ton of awful work on them (and they'll never know that it's actually the worst). <3 you guys. I may put up some of the code tomorrow, or even if we can get a tech demo, put up a little video.

After Work Strolling:

So I went to the gym after work, which was pretty standard, but on my way back I checked out the campus. The row of academic buildings are actually gorgeous, if you can get over to the computer science building definitely do it. It's not that pretty, but you can never have too much computer science. There's also a park, I think it's pretty nifty. In a related, but not totally a member of this location Kelsey decided to go running last night and I tagged along. If you were to take any advice from me about things, don't go running with Kelsey unless you're prepared to *really go*.

Threepenny Opera

Darjeeling Limited:

I made Phil watch one of my favorite Wes Anderson movies and it really seems like he got a ton out of it. One thing that I would be interested in doing is creating an online suite where people could watch a movie at the same time and a view leader could point things out about the movie.
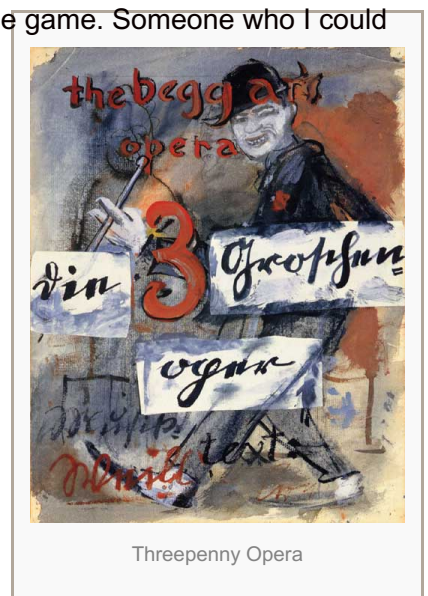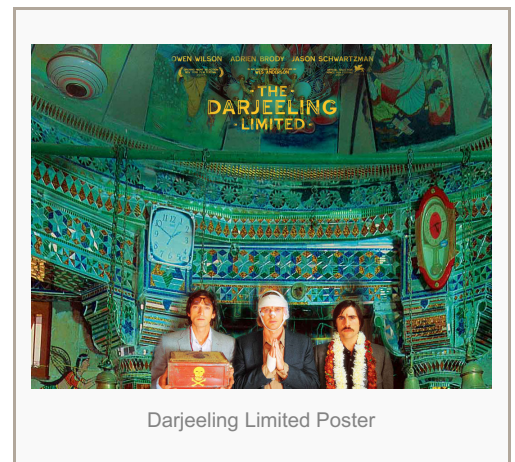
04/06 Updates and Loading Screens

Posted on June 4, 2014 by getchm

Solution For the Random Walk:

A beautiful bit of pseudocode for you.

Darjeeling Limited Poster

```
Track position using two integers, one for x one for
y
Ask user for the number of steps they want to take
Get number of steps
For that number of steps...
Generate a random number
Mod the random number by 4
If random mod 4 is 0
Increase variable x
If random mod 4 is 1
Decrease variable x
If random mod 4 is 2
Increase variable y
If random mod 4 is 3
Decrease variable y
Display x,y
```

I really hope that maintains formatting…

Why use Functions:

I love functions, I would sing to them, decorate them to look like beautiful hats, if ever I give gifts, then it's functions I give to those I care about most. These magical beauties make it so you will *never have to rewrite code.* When coupled with **OO** (object-orientation) these magical items will ensure that not only can we cooperate on a big project, but we can build in such a way that work is easily divisible. Learn to think in terms of objects, each class has members that allow it to interact with the world. This models the real world extremely well, that's why **OO** is so powerful, it's the programmers *affordance* to the world.

Public and Private:

Yes, they're important. for the sake of true **OO** and *modularity* maintaining these values is the only way to ensure a true black box model. If you don't do this it'll hurt me. My insides will turn into the old lemon icing Oreos that were awful and I won't be able to enjoy normal Oreos ever again. Why would you wish that on me ▨

Dinner:

Everyone was a little stressed yesterday. To blow off some steam and get ready for the coming few days we went to *Hickory Hams* (close…) where we all enjoyed a nice chat and really had some bonding time. That was nice, upon getting home I felt more peaceful than I had in years. That time was very needed. Though *Hickory Dock* does sort of look like a Midwestern Disneyland. It might as well be with that much tasty food.

NURBS and Stuff:

A key part of our project is using NURBS to analyze curves that are produced in CAD. These curves are a predefined function inside of most CAD software and basically revolves around using a control net to manipulate a shape. Turns out we can also use these for hardcore analysis. That's where we're supposed to come in, we don't have Rhino yet, so we're kinda just flopping around. On the bright side, potentially publishable results. Get hype for isogeometrics…

02/06 Getch's Poignant Guide to Code: The Blog

Posted on June 3, 2014 by getchm

Prgrmmn:

We did our first progging today as a class, everyone seemed pretty taken aback with some of the details of C–. It's to be a bit expected that's the first day is rough, we don't have a ton of time, and everyone has to internalize a great deal of the ins and outs of the syntactical mayhem that makes up proogrooming. Still though, the folks around are taking the lessons better than the people I teach back home (A group of 7-10 year olds), but they also learn Ruby which is like the easiest programming language next to Scratch.

Some people might be trying to memorize things, I guarantee this isn't the way to properly learn programming, it's like in math, you can't *fake* understanding, you have to practice, you have to fail. It's through not knowing what you're doing that a lot of things things really start to develop in the brain place. If you learn this way the class will be 400% easier. Spend some quality time on Project Euler maybe.

Here's a problem I really liked, make a program that uses a random number to take a step in a random direction in the xy-plane. You may only travel in the 4 cardinal directions (up,down,left,right). Each random number should correspond to a single direction. You can do it *procedurally*, and it's a cool little question because you can demonstrate the *pseudorandom* nature of numerical generation. I'll post up the soln tomorrow.

UX Lab:

Pronounced uhks

It was pretty awesome, though that room is pretty horrifying. Not only is it tiny, but it's boisterously hot, anyone being tested might actually just be stressed. Just some random thoughts about nonsense.

Muting Phone:

Muting my phone has been sort of an issue. Alexis' preferred method of talking is via the phone when he's off and away, not having mine around sort of makes that an issue. All in all though communication hasn't been a huge issue.

Missing my Computer, a Poem:

I miss my computer the way that lovers miss the stars. I miss my computer the way that the thirsty miss straws. I miss my computer the way that armadillos miss looking normal.

Project Euler:

For all those nerds sitting around waiting for additional programming challenges that are super tough check out Project Euler I've done the first 5 or so in C.

C++ Data Types:

One of the things we sort of glossed over were the differences in the *primitive types.* I'll try and run them down here.

- *Integers*: Affectionately referred to as int in C/++. These non fractional dudes take on the personality of the group they are named for. They're 2 byte integers (16 bits) allowing them to hold numbers between -32768 to +32768. Anything higher or lower than that then you'll underflow/overflow. It's a serious issue and won't throw an error. Also there are unsigned integers which, much like sunflowers in Spring, can't be negative. These kind integers go all the way up to 65536.

- *Float:* The standard math thing, use these whenever you have to math some stuff up and you want to maintain the decimal point. If you try and divide integers the result will be stranger than finding your teacher outside of school. Floats have the same size as integers, but also have the power to represent decimals.

- *Short:* It's a one byte integer, when you're lacking space and don't know what to do look at shorts! Turns out they're not just for hot weather throw on a pair of these babies and you'll be representing 1 byte(8 bit) integers in no time. For the numerically uninclined this means +255 to -255 or for the unsigned variant 0-512.

- *Double:* If you have to deal with complex numerical figures and you need *double the precision* then look no further than our good friend the double. These mathematical machines are 4 bytes long (32 bits) allowing for some massively large numbers that you would have to try to under/overflow.

- *Long:* It's double's younger brother who decided to become a lawyer, this smart cookie is a 4 byte monster who specializes in anything avoiding a decimal. He likes long walks on the beach, cooking for the kids, and exponential growth.

- *Bool:* These super dudes are all about the truth, they only have two values, true/false, with 0 being false and true being everything else! Maybe they're a bit biased, but hey, they're more put together than their non digital brothers.

- *Char:* These single letter knockouts are actually numbers being represented as letters. Any integer value declared as a char will take on it's ASCII counterpart, don't know what that means, that's okay! Make yourself a char variable with the value 61, print it out then increment its value.

31/05 Watching Phil Flail Fantastically

Booklovoo:

If I were to ever account any single substance for the total generation of my happiness it would most certainly be that bready and delicious desert booklovoo. It has a rich endearing sweetness, much like spending time with friends around a bonfire, but is lightly encrusted with bread and edible, much unlike spending time with friends around a bonfire. The total sum of delicious and enriching overtones brought about by eating sat coursing through my spiritual being even until today.

In fact the total overwhelming bliss is a bit concerning. There has not been even the smallest opportunity in which I can hear a careful stemming of voices coming from its rich goodness… We must worship the booklovoo, **ALL WORSHIP THE BOOKLOVOO.**

Thesis Defense:

Sorry I don't know what happened up there, but I've decided to keep it in the post just in case this becomes important when pastries exert their dominating power.

Caglar (it hurts me to spell it that way) did a fantastic job defending his thesis. His posture during the presentation was one of confidence despite clearly being infused with nervousness. I thought that his chosen methods of result analysis were fantastic (though I did not understand them), since the statistics guy was satisfied. Mostly though his study provided a great deal of interest for me. I know a fair number of people at Wells who suffer from this *nomophobia.*

A friend of mine will not put her phone down. It drives me crazy. We'll be out to food and she'll be phoning, working on a project and she'll be phoning, going down water slides and she'll be phoning. It's a serious issue for her, one that she has acknowledged, but cannot seem to shake. Caglar's presentation made me a bit more empathetic about her inability to put her phone away. It's not just a single case, but rather almost an epidemic (though maybe not so bad) among our generation. I've had it before, and it took a great deal of willpower to get over the fear of not having my phone with me. Voiding the novelty of being connected is one of the great triumphs of my everyday, albeit novel may not be the best word. My mom for instance, she hates that I insist on staying away from my phone, and in several cases it's actually caused a great deal of strife for her. Trying to find a careful balance of connectedness and isolation is a challenge in every conceivable notion of that word. If anyone has any advice, well, leave a comment.

Caglar demonstrated something very important about sciences though, something that Kelsey helped point out rather directly, no amount of effort will ever produce a *perfect study.* His survey effective as it seemed to be still lacked some rigidity with the phrasing that could have affected his participants. Even so he displayed a certain kind of grace when responding to the criticism, I hope that our group is able to learn from that example because we're going to mess up **a lot.** Even our journal selections may not take us anywhere, so when mistakes are made we should channel our inner Turkish Titan and hopefully just keep going. It seems research isn't about not making mistakes, but messing up in a way where you can't be criticized for it, I'm okay with that.

Edugaming:

Phillip asked me about *edugaming* stuff and it came up at lunch yesterday so I thought I'd devote a section to ranting about making our kids play more video games (unless you don't have kids, then you should play more videogames). A great place to start is with a video I can't find of a guy giving a talk at a conference I don't remember(GDC maybe?) about learning behavior within games. His talk is structured so that every time he makes a point about how games make our lives better he hits a button and the Mario coin sound plays (*ding). His major point is that games allow us to rate and compare our performance, and that when you do something well there is no immediate tactile feedback. With games we get that, you get the immediate rush of success, and that when you drive well nobody cares, but when you don't drive well you get punished for it. So what… Well I like to think that positive reinforcement

works much better than negative reinforcement, when you do something well you want people to notice and reward you for it. Think of Phil on that tower at the ropes course, he pushed himself because we were noticing, and you know what happened, he did it. If there were some score counter that aggregates the successes of your life how might we behave differently… Well let me attempt to emulate a big part of that talk.

You wake up and brush your teeth and you get points for good oral hygiene (*ding), and you go downstairs and you *can* eat the super sugary cereal, but you want to get the good health points so you grab the cheerios and a banana (*ding). Your health insurance provider sees that you're making healthy decisions because you have higher points so your premium goes down a bit. Now you're driving to work and you go the speed limit(*ding), you're not being overly aggressive(*ding), and that awful person who cut you off, you're just gonna let that one slide (*ding, *ding, *ding). Then you get to work on time (*ding), and your boss brings you some work that needs doing, so you get to work on it (*ding), but then something really weird happens, you realize you're done faster than you thought because you've been training yourself to do these forms correctly so you can get points (*ding). It's just a part of your day, it's learned behavior, it's subconscious. Anyway it's lunch time so you hit the stairs(*ding) to get to the dining room where you opt for the salad(*ding), and you make an effort to call home(*ding) to let people know how work is going or whatever… and so on and on and on. But that score that you've racked up, it doesn't go away when you die or when your kids grow up. And maybe if they can see how good you've been, and how good their peers are they'll want to compete in some sense, maybe they'll *want to be better people.*

Of course there are lots of problems with this idea, privacy being the big one. Then how do we regulate these scores, and some people don't want to do this type of thing. There are a ton of human issues that aggregate when we attempt to put numbers on the human experience, nobody has a good answer to any of them, maybe one of you can solve these issues in an ethical way.

The other talk is from Jane McGonigal. Aside from sounding like she's from Harry Potter, she gave one of the best TED talks about how "Gaming can Make a Better World." She asserts that as a species we need to play about 21 billion hours (up from about 10 billion hours). Her talk is about how in video games we take on a more optimistic persona because we know that there is a way we can win, they're built so that we succeed. All of this time playing games roughly translates to 10000 hours studying which is roughly equivalent to the time you spend in school between 5th and 12th grade if you have perfect attendance. This represents an entire alternative education track. Gamers are being trained to be optimistic and capable problem solvers. Unfortunately we're using games as escapism, but we can also use them to solve real world problems. She basically says that we have a framework to generate these powerful changes, all we need to do is build for it.

Check out the video. **>>http://www.ted.com/talks/jane_mcgonigal_gaming_can_make_a_better_world<<**

Extra Credits did an *entire month* of videos about education. I can't even begin to sum them up and do them justice (something becoming super apparent after rereading the two paragraphs above). The gist of the videos comes down to developing 21st century skills and building something called *transference*. Transference is the ability to generate awareness of the applications of the things you are learning. Often when we sit down to play games we check out, the things we practice have no bearing anywhere besides in the game. This is blatantly false. Things like *communication, critical thinking, and collaboration* (21st century skills) develop every time we play games. Building the bridge from the game to our everyday experiences that's the challenge. The video offers some examples about things taught in games, things like using Hearthstone to teach order of operations, but an example that comes immediately to mind is using Smash Brothers to teach risk/reward scenarios, or strategic planning. These are notions that we forget are important about the game while we're playing, yet we use them just as much as anything else. Finally to wrap up this section(I'm hitting the 1500 word mark), games confer a serious sense of agency. Think about that in context with the the Mcgonigal talk. They are both deeply impactful. Now I'm going to stop. There's a ton here to think about already.

Go watch Extra Credits, it's brilliant.

Looking at WordPress Plug-Ins:

I've just decided to write code in the code section and hope that it works out. Digging about the wordpress on the server doesn't make much sense, and might negatively affect all of you, so I'm just going to be sad and do it the ~~hard~~ lame way. The wordpress plug-ins are not a completely discounted option though, I just don't want to waste any more time not getting anywhere. Anyone else have any ideas?

A bit of C/++;

Some people seem a bit standoffish with the programming, so I thought I would talk a bit about it as best I can.

First off, C is an archaic language, there are many other languages that work just as well without some of the awful things C brings to the table. C++ remedies a good portion of these and introduces **object-orientation** in a manageable and awesome way. The first thing that's going to happen as you jump into the language is that you're going to sort of have to recraft the structure of your brain a bit. I gave a talk at my school about how object-oriented programming was ruining my life, soon it'll ruin yours too. The thing to take away from this is that computer science is a form of literacy, the most sought after software engineers behind computer scientists are actually English majors. Spending time with these languages will help you develop a strong sense of mathematical reasoning (or just reasoning in general), and will also teach you to structure ideas better. Don't think of programming as learning to use a computer, the same way you shouldn't think about math as being able to use numbers, you're refining your ability to process complex ideas. It's going to be alright, you're all smart. In the mean time if you want to get ahead look up thinking in C++, it's a free online book that was super helpful. If you don't want to do that, then think of programming as writing a really weird essay about *Finnegans Wake*, nobody will know that you're pretending.

Meyers-Braggggggsssss and ARG:

Being someone who likes to spend more of his waking life on the internet than making healthy decisions I have ultimately found the subreddit for INTJ. It's this incredibly lofty and just elitist place full of awful people who I really don't want to be associated with. Many of the characteristics they tout are things that I can identify with, but their interpretation is sometimes a bit skewered. For many of them they seem to identify with the result, to take it on as an identity. I don't think that's a good thing, having a solid grasp of who you are should be a product of the unique experiences that govern you. The whole test feels a bit handwavey, sometimes a bit detrimental come a time when you need advice. Maybe being told that you're supposed to be a bit cold and methodical isn't the best thing to tell someone (insert bitter feelings here). Some of the reading links identify this fact much to the credit of the site, but others in the community seem to ignore that fact. MBTI is an interesting tool, but don't let it define you. It feels fortunetellery for a reason.

ARG was basically a big sit down to talk about the structure of an effective problem solving unit. I would recap some of it, but there isn't really a point since it was a fairly guided experience. It did help me feel less intimidated by Ming Chen. though that was mostly a personal issue. In any case it did bolster well for getting Alex involved with the group which was super nice.

Walking Into Town:

Anton and I walked into town to figure out the best place to find some speakers. The walk was incredibly pleasant, the heat was just starting to die down, Anton can fill the feelings of being lost with hope, and the scenery is actually astounding. The whole area is gorgeous, lots of trees and rural looking areas flanked my a surprisingly robust downtown area. Make the walk if you can, there hopefully won't be any attack deer, we almost didn't make it once they showed up.

Thrift Shop…

There's this awesome thrift shop in town next to a tabletop store, it's full of vaguely Goosebumps like items. For

anyone who enjoys eclectic mishaps and goings on, I highly suggest you spend some time checking it out. If you happen to see a rectangular camera please pick it up, I think Anton's essence is still trapped in there. He would really like it back.

Tabletop Plans:

So I promised a friend I would write him a Dungeons and Dragons campaign, but I've never played before. Phillip and Anton have graciously offered to let me undertake a campaign with them, if anyone is curious on helping me educate myself on the matter let us know! I promise a great suite of absurd goings on including bear hunting and mango skating.

Rope Course:

I think we all slept off the rope course, I don't even remember it happening very well given all of the sleep that went on. In fact I'm not even convinced that happened at all. Especially that part about being beat by Sam, nope. Never even happened. All just a really, really fun dream. (Thanks for catching me)

Digging Into Isogeometrics:

So after the ARG talk we had a nice chat about what *isogeometrics* are. Basically they let you maintain the shape of a designed object when you attempt to run engineering simulations on it. Think of eating a sandwich, you make the sandwich then you eat it, with *isogeometrics*, you eat the ingredients, try digesting it, then construct it in your belly. The entire process of lunch is reduced to single horrifying step. Don't quote me on that analogy by the way, it actually doesn't make any sense.

Searching for Academic Papers:

The search was easy and prolific. There's one paper in particular about the use of object orientation on the generation of t-spline *isogeometric* analysis that is really pertinent to what we're doing. A paper idea is using this paper as a foundation for a look at developing an **OO** (object-oriented) look at interface design with b-splines. See I knew you were gonna call me out for looking at the wrong type of splines, trust me on this, I have a plan.

30/05 Walking Around and Making Bird Noises

Posted on May 30, 2014 by getchm

Lunch Time Shenanigans.

In the land of Iowa the floor shakes with the stomps of the *Odyssey of the Mind* children. Each of their small steps is but a piece of a greater drum which shakes the Earth. Their shouts in unison crack glass, their many eyes scald flesh, and they make it really hard to get a cup of coffee at lunch. *Ugh…*

The criticism above comes with sort of a disclaimer, although the kids seem to have invaded every nook of the campus they are extremely welcome here, not only does **OOTM** promote an often forgotten element of creativity, but seeing the Mexican kids getting ready to participate really warmed my innards in a totally heartfelt and not creepy way.

Lunch also embellished a warm sentimental feeling by way of seeing my graduate student struggle with the chicken patties. It could be called a bonding moment if we weren't both so distraught by the lack of detectable moisture within the chicken. Anyway onto the day.

Developing Mentally; Setting Timelines

Our group meeting was an incredible demonstration of team cohesion. There's this idea in programming, that of the

expansive bazaar and the elegant cathedral, our team is definitely going to craft the latter. We did this neat thing where we estimated the total number of days we had, then sat down and asked what we could do. Our answers (by the way, we don't have 65 days, off by a factor of two on my part) were wholly exciting.

It really is an interface development job, we're to take some **CAD** software, most likely RHINO, and develop a plug-in which will use the *isogeometrics* upon some shape. It's really neat stuff though I have to admit that at first glance the math definitely looks like someone poured random letters onto a sticky board then shook it vigorously leaving a podge of nonsensical gibberish.

On a more personal level, I'm super into *pseudocode* and pre-design as well as rubber duck programming. I'm sure we'll talk about both(but not rubber duck prgrmmn), but I'll offer an example of *pseudocode* in the spirit of *Why's Poignant Guide to Ruby* (best programming book in my opinion). Assume we want to make a program that prints out whether or not an earthquake is going to be terrible for everyone. Our *pseudocode* would be…

```
get earthquake
size
check if earthquake is
horrifying
  if it is print out "run
away"
is the earthquake just unfortunate, and not
horrifying
  if it is print out "Cancel your trip to
Mexico"
Is the earthquake a smooth ride and not any of the above
conditions
  if it is print out "Go out and surf the sidewalk
bro!"
If the earthquake isn't any of the above check to see if there is an
error
  print out "Yo, you sure this is an
earthquake?"
```

Oh dear god formatting that was the worst. Definitely need to figure out a robust way to write code in this more easily(*cough* let me do things to the CSS file on the server).

Back to though. We don't have machines that are ready to program on yet so I spent some time trying to pre plan the plug-in. A good portion of time was spent thinking about what each of the non-devoted programmers can do to help out, but I don't want to overload them particularly because Mari is going to probably wind up doing a good portion of the interface work, but I don't think I can handle linking the interface to the original Fortran code that acts as the backbone of the *isogeometric* code. It's just something to talk about, our new member seems super excited so his help is going to be greatly appreciated once things get going. In any case I figure there's a need for at least 2 API's one between **CAD** and C# and one between C# and the Fortran code. It needs to be seamless inside of RHINO and it needs to be fast if we want anything worth anything. Building the API's is going to be the most challenging aspect as GUI design in C# is easy.gif, that being said API design is nontrivial. It may be worth our time to look at design patterns and get this going right early on, but that might add unneeded stress to the whole endeavor.

Another thing comes to mind as this is furiously typed before besprawling my bed with my quickly faltering flesh (besprawling not being a word), we want to get published. This on the whole as a project doesn't directly lend itself to that in any immediate way. It's going to be something to talk about with the crew, they seem a whole lot more artistically inclined than I do so maybe they can come up with something (insert winky face so my team knows I'm talking directly to them).

Interactivity reading

Right, so preliminaries first on the reading… The research group in question decided to discuss the merits of interactivity on the browsing experience. One of the most outstanding elements of the paper are the thoroughness of the metrics. Though a bit skeptical of human based studies most of the time, this project felt well conceived with all feedback giving the impression of consistency. Frustratingly, this rendered most of my complaints moot. Interactivity is good for the the browsing experience in terms of memorability, but the study found that most people identified the classic website layout as more pragmatic. I was a bit unclear about the final verdict the authors suppose (attention can only be stretched so far once an opinion's formed about the result), but the data suggested my interpretation to be the correct one(yell at me if I'm wrong). There are a few other implications to be considered, for example the use of the narrator in the Louve web page which may detracted in some cases.

A huge issue I took with the paper was the failure to account for *affordances* as being a serious factor on the user experience. The chosen demographic all had experience interacting with common stereotypical websites which makes them more inclined to understand the formula (ergo boosting practicality) of the stereotypical site. Same with the google maps system of site navigation, a listed response even mentions their familiarity with the system.

"But Matthew we want the user experience of current users!"

This approach violates the definition of research as it is not immediately *generalizable*. The goal should be to say that interactive user experiences greatly benefit/detract/alter in this way. We have found conclusive results as to the benefits of interactivity, but when framed with the control audience being computer savvy we lose are particular finesse in the comparison. One that may be trivial, but should not be discounted.

I think finding universal *affordances* should be a prime goal that seethes under everything we do, an awareness is key to good interfaces. Having a diverse demographic is a fantastic way to increase this awareness.

The reading was a fantastic bit of work though, it felt well meshed and the idea was actually brilliant. A good portion of the non-CS stuff went right over my brain though, in fact I hope they'll still be there so I remember to ask in class. I hope a portion of my arguments here come from that ignorance rather than just an oversight or just some discounting of the author.

Other Project Comments

Ya'll projects look `mazin. I originally thought team tutor was focused in on in classroom research, but the idea that we can develop simulation based teaching in the military is just as pleasing. Being someone who is vastly interested in the merits of *edugaming* (a portmanteau of education and gaming) the advances that can come of developing something that does this well would be game changing (excuse the joke) for public schools. I could write for days about this stuff, but please if you get the opportunity check out the extra credits education series. Not only is it well put together, but the analyses are spot on.

>>https://www.youtube.com/watch?v=1HTS2nxpRqM<< link

Flight Simulation is flight simulation. There's a ton of nuts and bolts, it's innately fascinating because flight is so. There is little effect in re illuminating the internal feelings we've all had with regards to the magic of flight. Please let me use your simulator crashing a virtual plane sounds like fun on a bun.

The Game Day experience was the last pinpoint on my radar, at least conceptually. It's hard for me to really get behind what feels like a recruitment scheme, but the tech is all there. You have **C6** (which oh lawd) and *Unity* in addition to serious graphics work. It's like they took everything I like about what we can do with programming and wrapped it into a fine taco, and not one of those lame hard shelled ones. It feels much less superficial now that it's in front of me, run with it, make me feel awful about discrediting the idea.

CAD Analysis/Language Analysis

I didn't do this yet, sorry for being awful. It was on the agenda, but I'll let you guys in on a secret C# is like C++ so it's probably going to get stuck with. The CAD stuff I'm going to have to hash out with the CADsperts (CADavers).

Facility Tours/Quiet Room

Easily the highlight of the day. I have a dream to one day sit with no noise in a completely quiet room, it almost came to me today. Soon I guess. The dive tank looked really cool, the top of the water was a bit marble like so I didn't realize how deep it was until it was a bit too late… I'd like to think that I'll look back on this and freak out because I don't remember what ominous thing happened when I realized how deep it was. Howe Hall is basically a jet museum, makes me happy that we get to sit around all this cool stuff, but we're separate from it. It's a nice bubble to sit inside.

The toronado simulator is pro as heck. I want to go back and check it out at full speed some time, don't know if I'll get the chopportunity to do so. There was definitely a Chronicle moment standing in the middle of it.

Gym Tour

Meh. People pick things up and put them down.

29/05: Day 3

Posted on May 29, 2014 by getchm

Supposing that this is the typical experience here in Iowa (which I won't take for granted because that's how disappointment happens), then I'm super happy with my decision to come out here. I would post a bunch of photos right now, but I'll hold off, I don't want to inundate the blog with a bunch of cheesy photos that seems rude. I think the overall goal currently is to try and establish my feelings about what's to come and the project.

My partner and I are working on *isogeometrics*, it's some swanky **CAD** (**C**omputer **A**ided **D**esign) manipulation stuff to integrate the **CAE** (**C**omputer **A**ided **E**ngineering) into the CAD process. My partner doesn't have a ton of programming experience and I don't have much CAD experience so the pairing couldn't actually have been any better. Once we get the other party member, our original decided to opt out, I think our team will be one of the most potently productive. If you're wondering what happened to our partner, well I often find myself wondering the same thing…

I like to think that maybe he/she got a super awesome job designing the next best water slide for his Uncle's water park, SlideLand(pretend this aside is a tm thing). That maybe he'll end up using some form of CAD to design these super awesome aquatic monstrosities designed to appease kids who live in places with summers far too hot. As he designs he'll grab the Rhino plug in and check out the awesome *isogeometric* analysis of his water slide to better see what parts of it will have to be reinforced. I like to think that maybe he'll think on his almost being here fondly and say, "I almost did that," to his band of extremely talented twins while he teaches them about the power of CAD.

To sum up *isogeometrics* our awesome coordinator left us with a fascinating article. Look for code next week. Let me know if there are any teepos.

I look forward to working with you all, let's all go to a **VRAC** conference after this to share our papers, it'll make the hotel cheaper.

I should write my own code handling thing for this….

>> [2011_Realization of an integrated structural design process analysis-suitable geometric modelling and isogeometric analysis](#)<< **Link**

OUR NEW TEAMMATE IS HERE ALREADY