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Posters, a Final (Indoors) Picnic, and Pathos

Posted on [August 2, 2013](#) by [baglione](#)

Last official day. Don't....cry....

The poster symposium was a success, and the picnic tonight is sure to be a blast – complete with hugs and maybe a few tears. Then it's off to pack, clean, pack some more, and get some sleep before the long trek home.

Seriously, this has been one amazing summer. Learning about all the different kinds of research in Human Computer Interaction has given me hope that interdisciplinary projects are gaining ground, and the long-held stereotypes of techies stuck behind screens is rapidly disappearing. People of all different academic backgrounds are learning how to work well together – kind of like our group this summer – to solve real-world problems. I'm glad I got to play a part in the ever-changing world of HCI, and I'll probably be back. Soon.

The Future (Ahh, Scary!!)

Posted on [July 30, 2013](#) by [baglione](#)

Day Two of the Final Week at Iowa State, and lack of sleep/hypermotivation have taken over. Woo! I'm ready to finish this project awesomely. No, epically.

We had our final luncheon lecture today, in which Pam Shill spoke to us about the Human-Computer Interaction Graduate program at Iowa State. I didn't realize that graduate school acceptance rates could be so low. And of course, the topic of professorships – and how hard it is to get them – came up. But I want to teach – I have for a long time, and I'm ready to admit it. So, like Pam said, it's time to get published with research. Early.

Therefore, blog-readers everywhere (hopefully at least 7 or 8 of you by now), if and when this paper of ours gets published, please read it. Give me feedback, criticism, anything. If this is what graduate school is like, and what it takes to get my PhD so I can impact students someday, I'm up to the challenge. Sure, I'll probably have several freak out sessions down the road about where I want to end up, and what graduate degree I really want to pursue, but that's to be expected. The way I see it, if I get started looking for schools, projects, ideas now, there's nothing to lose. Right?

Running Out of Time

Posted on [July 29, 2013](#) by [baglione](#)

After a weekend of poster-editing and paper-revising, we met several of our faculty and graduate mentors today about all the pieces of our project that are still up in the air. We finally got results that compare our tutor's feedback to that of an instructor, which is pretty neat, because we can see where our tutor shined and where it needs some work.

Now, it's time to work through the remainder of the paper, finish up the poster, and wrap up loose ends in the code. Not to mention prepping for the final poster session, and wash the random piles of laundry sitting around my room that need to be packed up. Busy week!

Lots to Think About

Posted on [July 26, 2013](#) by [baglione](#)

Bugs. That describes our program today. Lots and lots of bugs. More specifically, as we continued to test many different student equations, we ran into lots of logic and runtime errors in our code. It's not that we haven't thought through the logic behind our tutor – on the contrary, I think we almost tried to account for too many cases and overwhelmed ourselves very quickly. My conclusion is that trying to replicate the human brain is indeed very difficult!



Journal club today was very, very interesting. First, we discussed a neat article that described how researchers implemented a haptic glove and game-based “charades” to model student learning in a classroom for blind students. The goal was to keep the student engaged and able to follow an instructor's speech gestures to drawings or diagrams more easily. While I think all of us were impressed by the promise of this approach, our guest, Jim, made the very important point that the blind community is in serious need of basic, affordable technologies. I think that, in the rush to create new technology, we as researchers forget the need to be aware of the users' needs. Jim brought this back into perspective for me. As he said, “What is universal technology if nobody can use it?”

Frustrations and a Fantastic Team

Posted on [July 24, 2013](#) by [baglione](#)

When your code just doesn't want to work, your final paper and poster are due, and you are running out of stamina, life becomes, well, kinda frustrating. We keep updating and updating our code, trying to prepare for many different kinds of equations, but it seems like we still can't quite pin down the logic. Conclusion: replicating a human instructor's brain is difficult! This is one of the great mysteries of artificial intelligence – how specific can you make a machine, and can it really supplement for a human instructor's ability to guide a student's progress?

One thing's for sure: my team is awesome. Yes, we've worked well together this summer, but more importantly we've gotten to know each other more than I ever anticipated we could. We all have goals that we're trying to reach, and I feel like our combined perspectives on school, this tutor, and life have had a really big impact on me this summer. I'm gonna miss these smarties!



Birthday Bash and My Poor Brain

Posted on [July 23, 2013](#) by [baglione](#)

Yesterday was Connie's birthday, and she was kind enough to have us all go out to dinner and celebrate with her. Happy birthday, girl! The evening was very fun!

So, my distributive property method has grown in intelligence – ish. It now accounts for crazy asterisks, exponents, and possibly flying pigs. And it may break...again. I'm waiting to see if it makes it through more rigorous testing tomorrow.

The most challenging part of this project has been crafting code that has to be adaptable to any kind of problem. I feel like we are heading into a storm – we need to be prepared for anything and everything. However, frustrations aside, it's exciting to know that once we finally get the behind-the-scenes code done our tutor may finally start helping students to learn a difficult subject much more effectively. That's a worthwhile project.



Back to the Blog

Posted on [July 22, 2013](#) by [baglione](#)

Yes, I admit it. I forgot to blog. For two days straight. Fail. I'm back to redeem myself.

So, I had no idea coding something as simple as the distributive property could take four whole days, but apparently...it can! Sigh. Oh well...it's done. I've found the best solution is to consult with your much-smarter teammates by Day 2, to save yourself from going code crazy.

This week, we are refining all of our code to ensure that we check everything an equation can have – signs, subscripts, thermodynamics quantities, etc. I'm also working on the paper draft. Since I actually enjoy writing, I'm not having too hard of a time (yet).

In other news, we went to the Science Center of Iowa (where I ran amongst happy science-loving children to explore many awesome things) on Friday and the Omaha Zoo on Saturday – lots and lots of fun! I took many pictures of monkeys and other random animals. This little guy was particularly interesting – staring at me as I snapped a pic:

Have a fantabulous Monday, fellow bloggers and blog-readers!



The Technical Part of Technical Communication

Posted on [July 17, 2013](#) by [baglione](#)

Confession – I would have loved to teach English. Which is why I'm not doing particularly well today in crafting – er, restructuring – our literature review and presentation for tomorrow.

Don't get me wrong – I love computer science and all the fantabulous code that comes with it. And I love writing. It's when the two try to come together that giant explosions and other apocalyptic things start to happen. I just forget that technical writers can't make sweeping generalizations or use words like "basically", "essentially"... etcetera. Maybe it's my recent bout of insomnia (6:30 am sunshine not helping) and resulting lack of sleep, or the fact that I drank decaf coffee today that's keeping me from the perfect sentence structure. Sigh.

T-minus 2.5 weeks to completion. Time to code more methods!

Posters, Presentations, and a Pleasant Lunch

Posted on [July 16, 2013](#) by [baglione](#)

Pretty posters! That's our project for the rest of the evening. Our draft is due tomorrow, which means it's time to be super-detail oriented about layout, color, and various other design aspects. I solemnly swear not to make our poster screamin' lime green, like this:

However, I can't make any promises about my dream car.

Today, we also established the tag names for our feedback that we send when a student submits an incorrect equation. Sounds boring? Maybe. But it's a huge step toward determining a student's specific error and helping him/her get back on track.

We're also prepping for Round II of inter-REU presentations; this time we'll be communicating with Rutgers' REU students, which should be neat.

Finally, we had the best luncheon lecture ever today! Dr. Larysa Nadolny presented her work on augmented reality in education.

Not only did we get to see demonstrations of some really neat technologies – such as apps that allow magazine pages to come to life – but we also got into an interesting discussion about the role games and simulations play in the classroom setting. I'm really becoming more and more interested in how students use tech every day, and I'd love to do research in evaluating these kinds of applications. Who knows...maybe a future project?



Respect the Calculator

Posted on [July 15, 2013](#) by [baglione](#)

In light of today's events, I must proclaim to the world that I have a newfound respect for my giant graphing calculator.

Specifically, I'm referring to the method I wrote today that implements the distributive property, as in $a(b+c)$ becomes $ab + ac$. Pretty simple, right?

Cue narrator: "Two hours later..."

Well hey, at least it works. Until I break it again.

The rest of this week, my team is splitting our time between drafting our final poster and getting all of our code wrapped neatly into a demo tutor. It's GO TIME! Let the thermodynamics problems fly!



Student-Centered Work, and Networking to the Extreme

Posted on [July 13, 2013](#) by [baglione](#)

Today brought another wave of interesting talks about intelligent tutors, and how people are employing them to do great things. One particularly interesting session discussed a disorder called "Dyscalculia", a disorder where otherwise intelligent students have trouble with basic arithmetic skills. Researchers are approaching the problem with clustering, which groups students based on similarities in their learning patterns and difficulties in order to better help them develop and practice their skills. It's individualized learning like this that really makes intelligent, education-focused systems a collective marvel.

Another neat note – I ran into some representatives from Ohio State, my home institution, and discovered I was standing right next to a professor from our physics department who subbed for one of my classes last year. I didn't have much chance to talk to him, but he seemed interested in the idea of a science-based learning tool. Maybe Iowa State's window to collaboration just found an opening...

I'm pleasantly surprised that I am becoming more and more interested in technology in education. Although I really want to pursue technological applications in music theory, this conference has made me realize just how broad and promising the education landscape is with regard to tech. I really want to be a part of all these neat developments!

So many awesome ideas – I need sleep to reorganize my thoughts.

P.S. I had a very enjoyable dinner with my team this evening. Thanks guys!

Walkin' in Memphis!

Posted on [July 11, 2013](#) by [baglione](#)

After a 4 am airport run, coffee, a crossover in Atlanta, two planes, and some Goldfish crackers, we made it to Memphis for the AIED conference. I didn't know how many people were actually working on intelligent tutoring systems until I heard some of the presenters today. It was neat to hear others speak about the components I want our tutor to have, like the ability to give the instructor more power over his/her assignments. Also, I saw a really neat app demo by SAS Software – an app which lets parents record a story for their children, then reads it back. It seems like a really neat way to supplement storytime for your child if you happen to miss it every once in a while – go tech!

Tonight, we went to the Memphis Zoo and enjoyed dinner, some really awesome/chill music, and bears. Lots of bears.

Excited for tomorrow – more sessions on ITSs and many on game-based learning, which David should love!

Professional Presence

Posted on [July 9, 2013](#) by [baglione](#)

While this blog is surely fun, we've been prompted to create a more...professional online presence. Therefore, behold:

This from the girl who swore she'd never get a Facebook. Go figure.

We've made great progress even in the past day – we've gotten two servers to communicate, created methods to split an equation at the equals sign, and started checking for important quantities contained in a master equation. The next week is going to involve a lot of refining our checking process, but this is starting to look pretty robust!

Food, Fireworks, and a Fantastic 4th

Posted on [July 8, 2013](#) by [baglione](#)

Let me just say, the long weekend was pretty enjoyable.

Some of us went back to Ada Hayden park on Thursday for a beautiful sunny walk:

Friday, we cooked actual food on an actual grill. Interns can cook -whaaaat??!

Finally, my team has made some pretty good progress on reading in our equations and checking for operators, work, heat energy, etc. We're still working on connecting our server, Java applet, and "checking" code all together, but once we have those linked, we'll be able to focus on refining the feedback we deliver. Heading into week 7, and progress is (finally) in view!



It's Fri – Er, Wednesday!

Posted on [July 3, 2013](#) by [baglione](#)

That's how we all feel, since we have the rest of the week off thanks to the 4th of July holiday.

Tomorrow will consist of lots of American pride/thankfulness for freedom, food, celebration, sleep, more food...you get the picture. Can't wait for fireworks!

I thought our presentations went really well today. We did a video conference call with the REU team at UNC-Charlotte, with each team giving a 10 minute overview of their project. One particularly interesting question that came up is whether enforcing a strict method of feedback for our tutor will suppress or discourage student creativity. That's actually an interesting point that I hadn't yet considered. Like Jose pointed out, engineering is, on the one



hand, often focused on direct answers. But, on the other hand, in order to be an excellent engineer, one has to have *some* creativity in order to generate new ideas. So, now we've got another interesting perspective on this ever-evolving tutor. Food for thought.

Much Ado in the Late Night Blogosphere

Posted on [July 2, 2013](#) by [baglione](#)

The interns were nestled all snug in their beds – well, all except one who passed up blogging for a team meeting today. For all the die-hard followers of this blog (all 5 or 6 of you, to be exact), my apologies for tardiness.

Today we heard from Chris Harding, a professor in Geological and Atmospheric Sciences who actually spoke to us about haptics. It was really neat to see how haptics applies to just about any area of human computer interaction. Coming from an engineering background, I can especially appreciate the applications in virtual modeling and parts construction for mechanical engineers.

The rest of the day entailed meeting with our group to determine whether we should switch from an XML to a string representation of an equation for our tutor (sorry for the nerd-speak: basically, whether we should change the way we represent an equation in code form), practicing for our group presentation, and continuing our epic streak of being really tired all the time. □

ZZZZzzzzz.... I mean, goodnight!

Hiking, Pizza, and More Trees

Posted on [July 1, 2013](#) by [baglione](#)

I usually don't write enough about the weekends, so here's my blurb.

We took a trip to Ledges State Park on Saturday. Aside from the weather being somewhat sporadic, we had an awesome day hiking, skipping rocks, and enjoying a fantastic view of the river.

Sunday, my group split time between coding and cooking. We made pizza snacks (thanks, David, for the idea!) and squash (with lots and lots of brown sugar). Random, but delicious.

Today we're focusing on separate methods for satisfying our "feedback tree" as we call it. For example, I'm writing an algorithm for checking the signs in an equation. Now if only my code would just spit out the right answer...

TGIF

Posted on [June 28, 2013](#) by [baglione](#)





Friday! Research question, literature review, and methods paragraph complete(-ish)!

Now onto a weekend of hiking at Ledges State park, prepping for our mid-project presentation, lots and lots of equation-check coding, and hopefully some sleep and maybe baking.

Today, we met with Matt, the thermodynamics instructor who is a major part of this project, and he helped us develop a feedback flowchart for our tutor. Now, if the student makes a mistake, we can clearly identify what kind of help he or she needs. The bulk of the challenge will be coding the actual checking, for which we need to develop a more detailed algorithm. But at least we're one step closer with the feedback tree.

Lots to think about this weekend. Tired blogger over and out!

Think, Think, Think

Posted on [June 27, 2013](#) by [baglione](#)

My T-shirt (and my heart) tell me that I have turned into Winnie the Pooh...sitting here saying "think, think, think" and revising our literature review. And revising. And revising...

I wonder if hunny (spelling courtesy of Pooh Bear) would taste good at 10:38 pm?

Actually, the writing is one of the best parts of a project, because you get to craft a really interesting description and make it known to everyone else that your work has merit and meaning. Perfecting it, trimming it down and getting it to sound perfect, now that's the challenge. A few more hours of midnight oil to go.

Dromedary Camels and Physics

Posted on [June 26, 2013](#) by [baglione](#)

Today is Wednesday, sometimes referred to as Hump Day, but I like to call it Dromedary Camel Day. No, this is not a fictional creature, but rather a camel famous for having just one hump.

If anyone needs suggestions for my next birthday present, I wouldn't mind having one of these guys as a pet. Just sayin'.

Today is for finishing up literature review. Actually, I just finished reading an article that really sparked my interest. This physics tutor gives students freedom to determine their own method of solving equations, but still gives them individual feedback based on those equations. I just didn't know the extent to which equation tutors could actually help students, but I'm seeing more and more just how advanced these systems could be in the future. So much potential!

As a side note, raise your hand if you know me from this past year [cough cough classmates] and think it's funny that I'm working with physics and thermodynamics this summer. The irony, the irony!

Climbing Trees and No Coffee

Posted on [June 25, 2013](#) by [baglione](#)

Today was another day of hard-core coding for our group. We're working a lot with XML trees, which store the structure of an equation and which we will analyze to provide students fitting feedback. The problem is, these pesky little whitespace nodes found their way in and complicated our tree, and kind of our whole morning. Basically, we'll be sweeping through a lot of mathematical operators, and whitespace, and variables...lots of recursive climbing and swinging from branch to branch, er, node to node.

And I need to get up earlier tomorrow, because I didn't make coffee, which made me sad. No, people, I am not a coffee addict like the stereotypical programmer – I drink decaf. Still, I like to say engineers are creatures of habit, so no coffee...it throws me off. Tomorrow, I'll be back to my regular polka-dotted cup, thank you.

Rainy Days and Mondays

Posted on [June 24, 2013](#) by [baglione](#)

I find it slightly disturbing that I was able to sleep through the monsoon from last night that people were describing to me. What if I sleep through a tornado next time...and end up *in* the tornado?!

Today is lit review day, which means my team is hard at work picking apart papers and articles dealing with intelligent tutoring so that we can relate them to our own project. We got a significant amount of coding done over the weekend, but we've still got a long way to go. Nose to the grindstone time, but I'm excited!

Better Late than Never

Posted on [June 23, 2013](#) by [baglione](#)

Darn. Finally forgot to blog on Friday. Well, I remembered today, so here it is!



Friday we all got to wear Google Glass [see awesome nerd pic below].

Now that's a fashion – and techie – statement.

Yesterday we went to the Des Moines Farmers Market, which was really fun! The weather was perfect, and so were the peaches, blueberries, and lemon poppyseed bread I found. YUM.

And today, we code the tutor.

All in all, a pretty epic weekend. Looking forward to making progress this week.



Homeless, but Not Sock-less

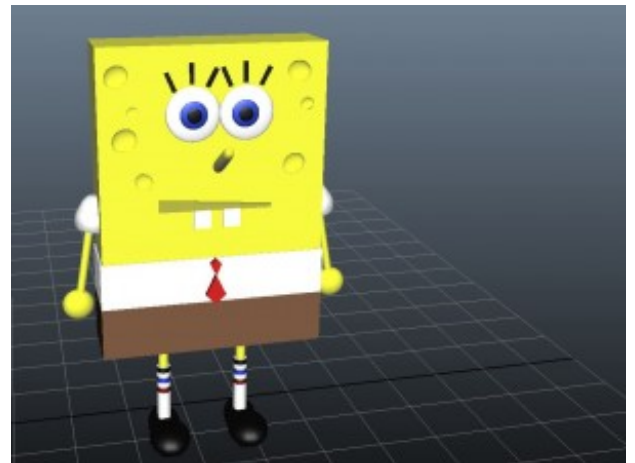
Posted on [June 20, 2013](#) by [baglione](#)

Who lives in a pineapple under the sea?

Well, apparently no-one does right now, as I didn't get around to making a pineapple yet in Maya. Sadly, Bikini Bottom is still devoid of this fantastic tropical fruit. *However*, Spongebob now has arms and socks –

Rock on, Sponge, rock on.

The luncheon lecture today featured Young A-Lee, who works in the apparel and design industry creating 3D body scanners. I was really interested in how her technology can be used to help people visualize the lifestyle changes they need to make for a healthier overall body shape. I think too often, our culture focuses on size, when we should really be focusing on health and proportionality. (Not to mention balance – which sometimes means a cookie in each hand, depending on the day). Anyways, technology's ability to generate personalized approaches to clothing and wellness is pretty amazing.



Imaaaaginaation...

Posted on [June 19, 2013](#) by [baglione](#)

Well, today was officially my favorite day of modeling class. See why?

Complete with tie and super-large eyelashes (but alas no arms or legs).

We have another “Intro to HCI (Human-Computer-Interaction)” course today, which should be neat. Last week we discussed cybersecurity and some interesting (if not slightly strange) technologies (such as a TV-walker for the elderly). I’m curious to see what will come up in today’s discussion. And tonight, we golf. So, just a warning to all of you who may be anywhere near me tonight – FORE!!!

The Intern-Land Before Time

Posted on [June 18, 2013](#) by [baglione](#)

We have officially moved on from snowmen to dinosaurs in Maya. Behold, a triceratops:

Now that everyone’s had a good laugh at my artist’s rendering of this dashing dino, an update on our project:

We had a meeting today with the problem framers group – the instructors who are leading my group’s tutoring system project. Basically, we determined that we need to parse student equations and interpret them as XML trees or as tokenized strings, so we can determine whether the equations contain the appropriate variables and sign conventions. I liked working with XML on past assignments for school, because it kept everything pretty organized. The difficult piece will be working with reverse polish notation (example: $- 5 \ 2$ means $5 - 2$), but I’m up to the challenge.

Snow in June!

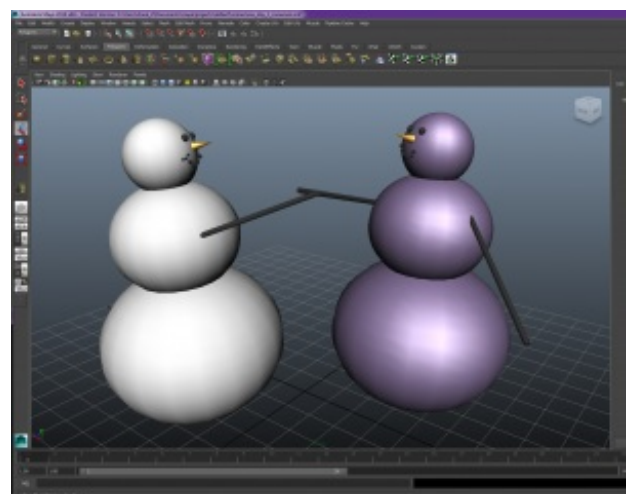
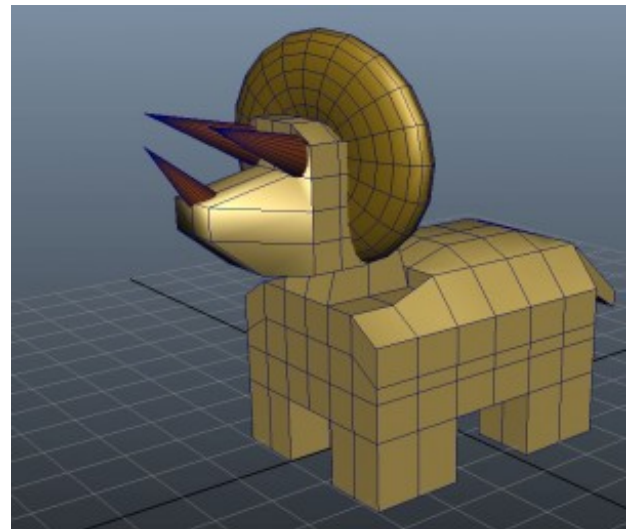
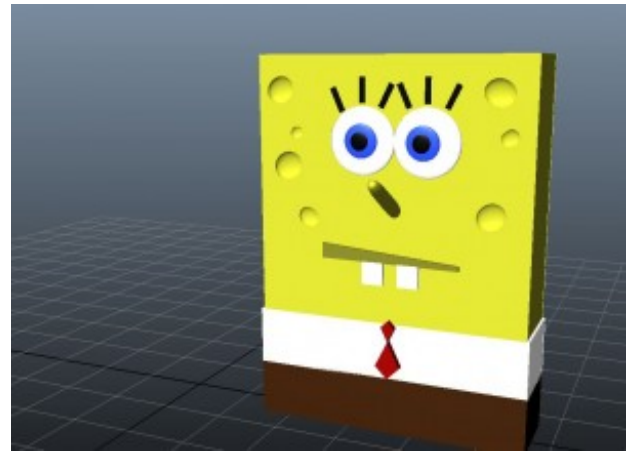
Posted on [June 17, 2013](#) by [baglione](#)

Just kidding. But we *did* learn how to make snowmen using Maya:

The weekend was pretty awesome too. As others mentioned, it was basically a round-robin mix of group cooking and OpenGL projects. We make some pretty awesome French Toast and spaghetti.

Oh, and Skyzone was really fun! Bouncing off trampoline makes one feel somewhat like a ninja, yes?

This week, my team plans to learn MathML, which should allow us to read in a student’s equation (for our tutor project). Then we can break it down into variables and constants to see if they understand the homework. I don’t know exactly how we will weave this equation piece into the existing tutor, but it’s mostly Java, which is (thankfully) what I learned this past semester in class. I’m excited to finally use it!



May you pass a purple snowman on your way home today.

Solar System v1.5, and Why I Love My Car

Posted on [June 14, 2013](#) by [baglione](#)

The planets are finally starting to look more realistic. See?

Now to make a 3D version of Pong by Monday!

In journal club today, we started off talking about distracted driving and ended up on the subject of autonomous cars. To that I say, just because I'm a computer geek doesn't mean I want everything I use to have a computer. After all, how would an autonomous car know when I want to drop by Starbucks in the morning? Can it order me a grande decaf coffee? I don't think so.

We also read an article about cybersecurity and how everything's up in flames. Meh. We should definitely be worried about security – I just don't want to be the one to fix all the problems that go along with it. I'd rather stay focused on the positives of tech, like its use in educational settings to assist students in learning and discovering.

Musings for a cool, rainy Friday in June.

So Much Tech, So Little Time

Posted on [June 13, 2013](#) by [baglione](#)

I'm having a bit of a technology crisis. I want to learn how to use it all!

We didn't have a lot of time to look at our OpenGL assignments after class today, but the slideshow was interesting because they described in more detail how the different kinds of light interact with each other.

We also heard from Jared Danielson, Professor of Veterinary Pathology / HCI faculty member. I would never have thought that Vet. Med could have so much crossover with human-computer interaction, but then he showed us an online environment where students can use to diagnose different conditions in animals. He also demonstrated a system similar to Google WebAnalytics that his department uses to identify areas of the curriculum that need improvement. As always, I am amazed by how technology applies to such a diverse range of academic disciplines. I'm excited to get going on our tutoring system, too.

Running on coffee, imagination, and a giant Jimmy John's cookie for the remainder of the afternoon...Let's go!

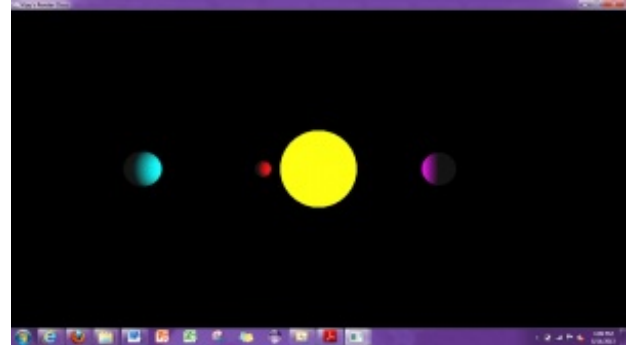
One Big Neon Nightmare

Posted on [June 12, 2013](#) by [baglione](#)

Is it OK if the universe has spontaneously changed colors? As in, we now only have three planets and all of them are sort of neon-pastel-ish?

Good thing I'm not in charge of these kinds of things.

Graphics has been pretty frustrating today, but that's to be expected since I've never done graphics before. As the saying goes, everything is a learning process. Speaking of learning, my team's plans for the next few days include



reading up on existing equation tutors and learning MathML. I'm excited to see what we can do to turn our equation editor into a useful tool for students, but I'm starting to feel the stress of not knowing how we will program everything exactly. Hopefully working on my team's graphics project will get me back into the swing of coding.

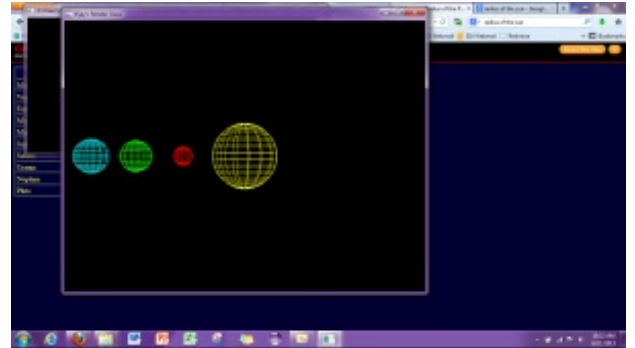
So, How's it Feel to Rule the Universe?

Posted on [June 11, 2013](#) by [baglione](#)

Well, maybe a wireframe model of the solar system doesn't *quite* count as the universe, but it was still an interesting day using OpenGL:

Pretty colors...

We also had another luncheon lecture, this time with Judy Vance, Professor of Mechanical Engineering here at Iowa State. I was particularly interested in her discussion of haptics and collision detection in virtual reality settings. Being able to "feel" parts hitting each other in virtual assembly tasks, such as with puzzle pieces, makes complicated mechanical simulations much more realistic. I'm kind of curious now about the use of haptics devices in education, and whether they are more effective than software programs for 3D modeling.



Artistic Awesomeness...or Lack Thereof

Posted on [June 10, 2013](#) by [baglione](#)

Me? Create art? Now *that's* funny.

OK, so I've never taken a graphics class before. It's about time I did, so BOOM. Welcome to graphics, Day 1. Today, I formed my name out of colorful shapes. Tomorrow, I will recreate the Mona Lisa using only pixel dots.

Just kidding.

I'm attempting to improve my program by using an initial point and using that to calculate slopes of lines, etc., which should make drawing a bit easier. I mean, it's not like my first name is a palindrome or anything. This stuff is difficult. Don't rush me!

I'd like to thank all of my previous math teachers for teaching me important mathematical concepts like slope...and for tolerating my sense of humor.

As for the equation editor my team is researching, I'm excited to finally (hopefully) get to play around with the software side of things soon. Thermodynamics is confusing as-is, so I'm glad our work will potentially lessen the stress for new thermo students.

The Magical Coloring Book

Posted on [June 7, 2013](#) by [baglione](#)

Our article that we discussed today in journal club talked about a new way to model coloring book objects as virtual pop-up scenes. To that, my inner child says BRING ON THE CRAYONS! I could definitely see this technology being used as a stimulating activity for all kinds of children, including those with developmental disabilities. Being

able to interact with their environment is so important for kids, and I love how technology can make that possible.

In other news, Connect...er...*Collinear* Four seems to be at a standstill until approximately 3 pm today. Looks like skipping the gym for a little more programming is what's in store for me this afternoon. Meh. At least my brain will get some exercise.

Magnificent Marvelous Mathy-Math...And a little bit of Thermo

Posted on [June 6, 2013](#) by [baglione](#)

For this equation editor that my team is going to work on, we get to play around with the tools that MS Word uses for generating fancy-looking equations. All those late nights spent putting together 20+ page engineering lab reports were not for naught! (Try saying *that* five times fast).

And I guess I should be glad that I'm actually using my physics experience, or at least the brief time I spent on thermodynamics, for this project. Part of me still pictures a giant fire-breathing physics dragon (hey, thermo!) looming over my work. Looks like some hard-core studying up and a little review of "How to Train Your Dragon" would be good for me this weekend.

P.S. – Iron Man 3 was excellent. Human-computer interaction at its finest.

Board Games, Nerd-Style

Posted on [June 5, 2013](#) by [baglione](#)

So, Connect Four is a wonderful game. However, since that's already patented, my group plans to make a different (albeit slightly similar) game for our C++ project: Introducing *Collinear* Four! That's right. Laugh. But I guarantee it will be the next big hit in the world of object-oriented programming.

On a more serious note, I seriously need to review pointers and references. After all, keeping track of all those *asterisks and ampersands& is going to become more difficult as we get into hardcore programming this summer. & * They seem * to be & everywhere...

I'm glad that my team now has a direction for the tutoring system. We want to incorporate equation checking and editing, to see if we can cut down on class time spent on proper thermodynamics equations and help students move along more rapidly in the curriculum. I know this would have been a really useful tool when I took physics, so I'm eager to make this a successful project.

School is Cool, and other News

Posted on [June 4, 2013](#) by [baglione](#)

So I know the blog isn't supposed to be about what we ate for lunch, but the luncheon lecture today was pretty sweet! Listening to Professor Oliver tell us about his own journey to graduate school was encouraging for those of us who want to push ourselves to the PhD level. As a humble undergrad who may want to teach at the university level one day, I appreciate all the advice that comes my way.

This REU has already been a taste of grad school. I'll admit the lit reviews have been slow-going, but we're finally digging down into the major research on which our projects are based. Learning about the different types of "models" associated with an intelligent tutoring system, such as "expert" and "student" models, is useful, because now we can identify what the system is lacking.

Now if I could just understand thermodynamics (and, thus, the tutor) a bit better, everything would come together

nicely!

Wait, what's a variable?

Posted on [June 3, 2013](#) by [baglione](#)

So today was our first “crash course” day of C++. Step 1: Review all of C++. Step 2: Create a game. By next week. `intern_stress_level ++` .

The articles my group has been reviewing the past few days are bringing up a lot of good questions about intelligent tutoring systems. I wonder: Would group collaboration on practice problems help students individually master more difficult questions in thermodynamics? How can we make the history tracking piece of a tutoring system more individualized?

First Impressions

Posted on [May 31, 2013](#) by [baglione](#)

OK, so first impressions...

Being able to conduct research and get a glimpse of what graduate students do every day is going to be invaluable for all of us, regardless of our majors. I think nobody really knows just how many possibilities exist to form connections between the world of humans and the realm of technology. Seeing these state-of-the-art facilities first hand and seeing the intensive work these students have put into making technology fulfill human needs really wakes up the “change the world” side of me. I want to gain not only knowledge of how to write a paper or type up lines of code, but also a better understanding of how to make technology more interactive and practical.

And a tutoring system is only the tip of the iceberg. Assistive technologies continue to make huge breakthroughs in fields of medicine, education...there are endless possibilities. Now I've just got to bring my ideas into focus.

Super Spaghetti Spires, and Other Matters

Posted on [May 30, 2013](#) by [baglione](#)

To kickstart my experience at Iowa State, I got to go through yet another spaghetti/gumdrop tower building challenge (third time's a charm, for this girl). Pasta – fuel for this Italian-at-heart's eager mind...and stomach. Now why is it that I always like square-ish towers?

I'm definitely excited that my project ties into my major. Creating a tutoring system to help streamline learning processes will be an exploration of technology's many roles in education – the good, the not-so-good, and the just plain awesome. Now the question is, where to start? Time for some team brainstorming.