Ahmed Abdirahman

OUR POSTER!

July 31, 2018 ahmeda2

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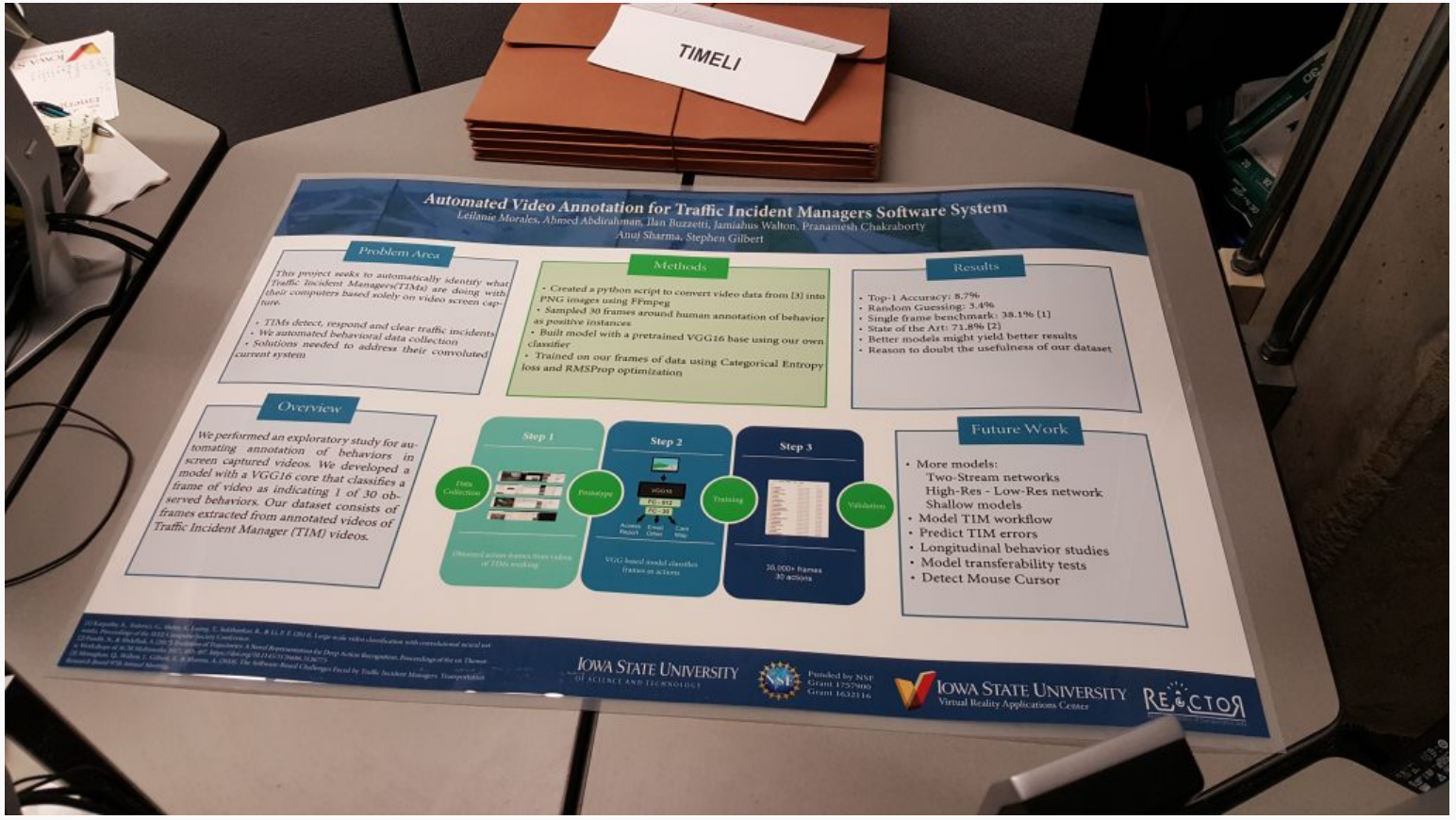

We received our printed poster today!

REU|2018 Leave a reply

The beginning of the end

July 30, 2018 ahmeda2

This is the last Monday of the program (😮) and I'm still working on the paper! Short and sweet post again!

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Here’s a successful/failed game of tic tac toe I had with myself:

X	O	
	X	O
		X

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Research is a marathon

July 24, 2018 ahmeda2

We are nearing towards the end of the program which, I feel, is analogous to the final stretch of a marathon. We have been writing our paper, crafting our poster, and gathering results on our model. Not too long of a post again (I’m

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sure you can guess why), Bye!

REU|2018 Leave a reply

Resume or CV

July 23, 2018 ahmeda2

I attended the last summer workshop titled “Resume workshop”. I learned the major differences between a Curriculum Vitae (CV) and a resume. A CV is a comprehensive document containing all (relevant) information like publications and presentations whereas a resume is a screenshot of your history tailored to the specific position you are applying for. Hopefully before the end of this program, I will update my resume, start my CV, and put it online (on LinkedIn and a personal site).

That’s all for today! Here’s an article about why the new macs are bad:

https://motherboard.vice.com/en_us/article/a3qewe/apples-i9-macbooks-run-so-hot-they-have-to-slow-down

REU|2018 Leave a reply

Suggestions for a new phone

July 19, 2018 ahmeda2

This week has been pretty writing intensive, so my posts will continue to be short. I was hoping to get some recommendations for a new phone as my current is having issues and I’d rather get a new one, instead of trying to fix this one. I don’t want an iPhone, so that’s not an option. Also, my price range is between $300-500 (probably closer to 300). Let me know if you see a phone perfect for me!

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(Not my phone but similar issue)

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Writing Writing Writing

July 18, 2018 ahmeda2

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I have been working on the paper primarily lit review and methodology. I need to conserve my writing energy for that, so my post is going to be very short today.

Here are some images from yesterday's light painting activity:

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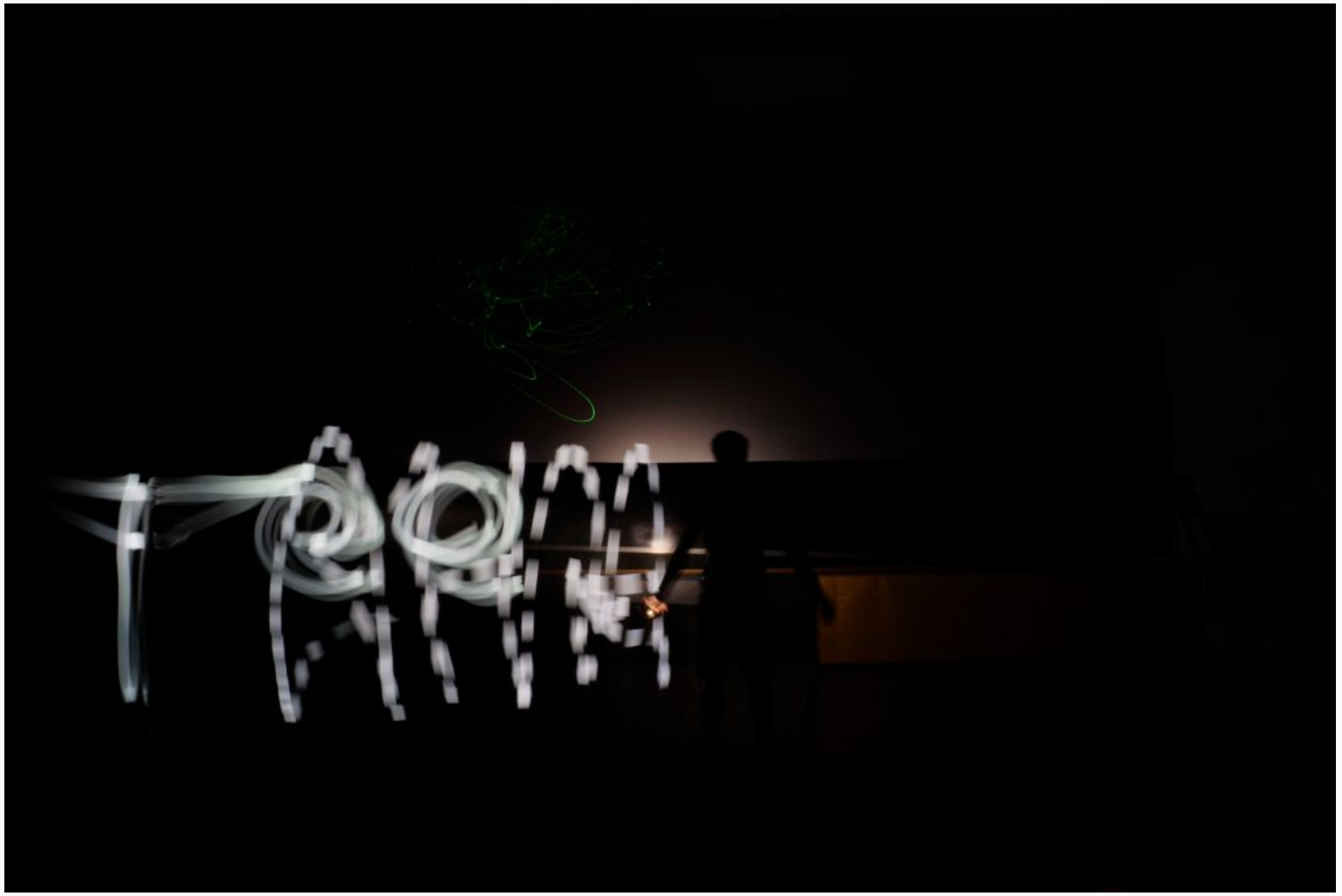

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What A Day For Design

July 17, 2018 ahmeda2

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The luncheon lecturer today was Alex Braidwood. A professor in Graphic design, sound artist, and a very interesting person. He discussed all of his very cool projects which you can find below. Below are some cool projects (that I found particularly interesting) of his related to sound and nature (surroundings).

(Word Press Is Not Displaying The Embedded Vimeo Video)

City Sonic from KPCC on Vimeo.

LA is loud. Cars roar, helicopters buzz, waves crash and (occasionally) subways rumble. Instead of muffling the noise out, Alex Braidwood decided to tune in.

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Video by Mae Ryan

Music
Revolving Record Loop by Matthew Aguilez

Links:

http://listeninginstruments.com/

https://www.instagram.com/formalplay/?hl=en

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^_^…–!!–…^_^

July 16, 2018 ahmeda2

Today was a bit rough. I lost my ID card for ISU and had to ride my bike to work. I've been working on the dataset and paper. The dataset is pretty much done (except for three videos), but I had to add some sub-directories for the images. As for the paper, I'm working on the methods section and literature review on video analysis in other areas besides our focus (Traffic Incident Management). I'll probably cover more areas on the paper, but it's a good start. That is all I have to report! Here are some cool pics/gifs of inside the C6:

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The Return

July 9, 2018 ahmeda2

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> ***Quote of the Day:*** *"How did it get so late so soon? It's night before it's afternoon. December is here before it's June. My goodness how the time has flewn. How did it get so late so soon?"*
> — *Dr. Seuss*

Sorry, I've been a bit busy this past week and haven't posted as much as I should. We are well past the mid point of the program and I want to take an opportunity to make a mid-way reflection (fairly late). I will talk about two skills (there are more, but I'll focus on these two) that I have gained that will definitely prove useful in the future.

Dealing with Uncertainty:

Dealing with uncertainty has been a lesson that has been hammered into us these past few weeks. These are few activities that helped with dealing with uncertainty:

Independent research: Although this program emphasizes teamwork and collaboration, I have done a great deal of independent research looking through various software documentations as well as literature. This has helped me be prepared in certain meetings and be able to discuss/ask questions where I wouldn't have otherwise.

'Figure-It-Out' Attitude: This is sort of related to independent research, but has more to do with the mindset during research. Having confidence and belief that I'll be able to figure out things that I don't understand at the moment has definitely helped.

Collaboration Skills:

Being able to collaborate (which I define as not working independently and then combining work, but working interdependently) is essential in research. Your work can be exponentially improved by working

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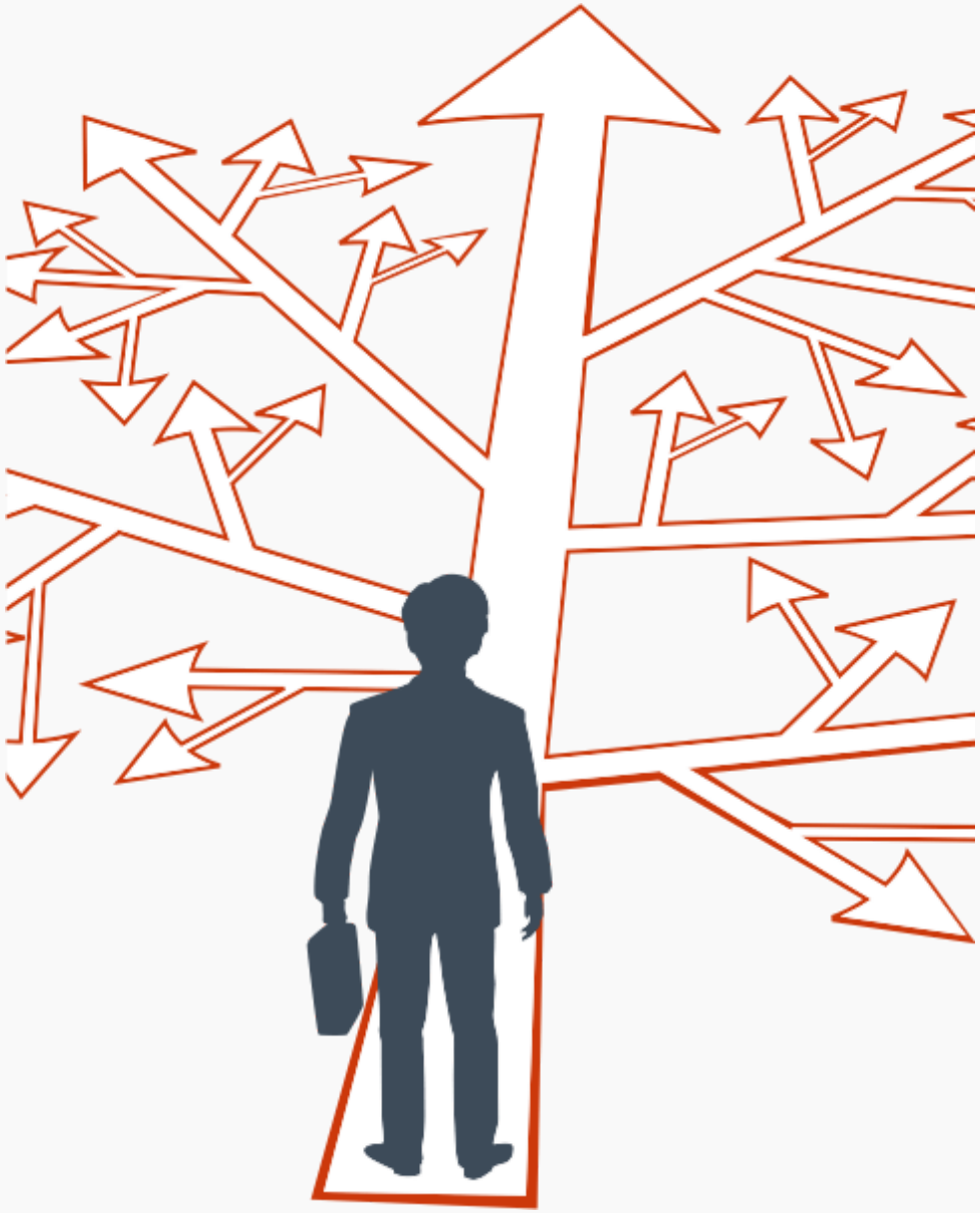

with others and generating ideas/solution that wouldn't have come about independently. It is also very difficult because working by yourself has some advantages like not having to explain your ideas. Below are some things that help build collaboration skills:

Effective Communication: Communication includes all of the essential parts (in-person, email, slack, etc), but what makes it effective is the plan the comes afterwards. Early on in the program, my communication was less effective because I would be apart of numerous meetings that didn't really lead to anything. But, I started to understand that even if the meetings are interesting and useful, to be effective they must lead to a plan with goals and sub-goals.

Willingness to Listen: I have always held listening with the intent to understand and learn as a guiding principle in my life. Its importance has become even more apparent throughout this program. With so many

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great minds and resources around me, I have been delighted to collaborate with folks at VRAC. From homework posts in HCI courses to 3D printing a small model of a brain, I have been able to do things I would never have been able to. And a willingness to listen, understand, and learn has lead to work on projects I never would have otherwise.

😮 🙂 😀

REU|2018 Leave a reply

Mini-Presentations

June 26, 2018 ahmeda2

Stephen made a great suggestion about all the REU students presenting something cool they learned. I really like the idea and would most likely present on FFMPEG as I have spent a long time using it recently.

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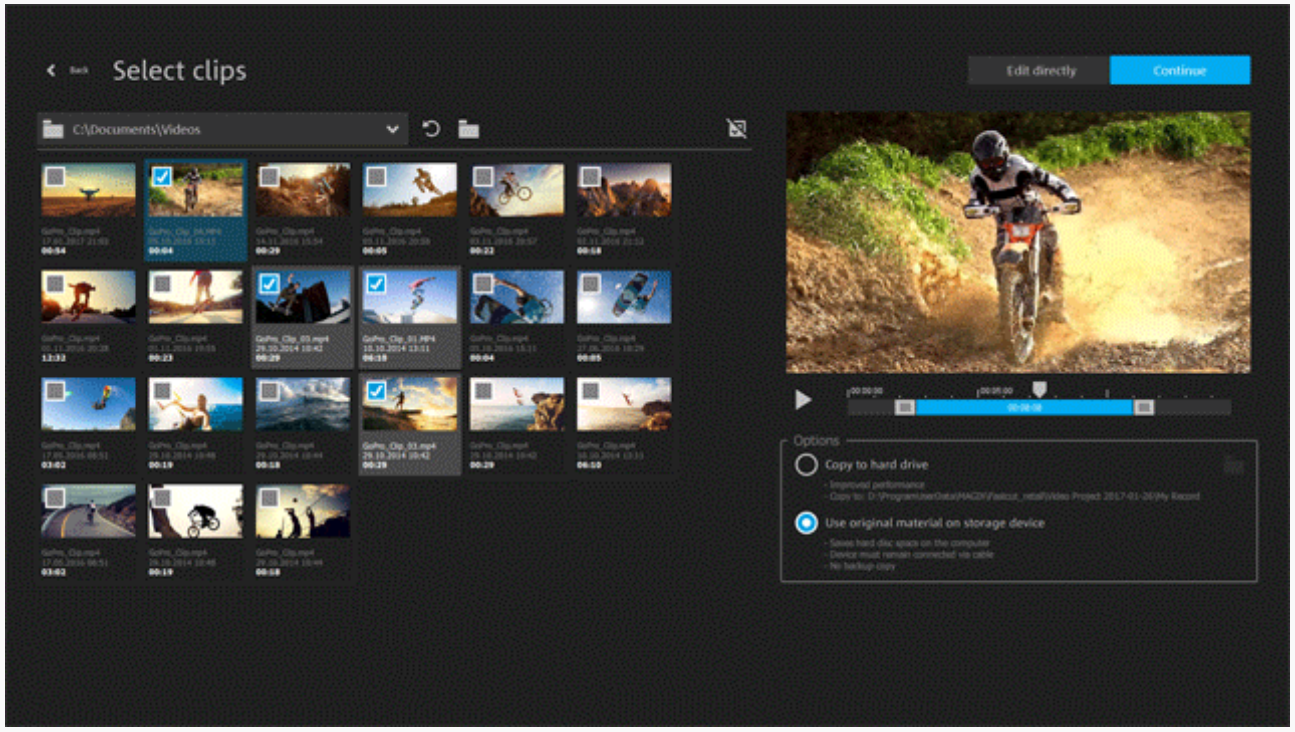
There are a lot cool functionalities that I think we would all find useful in our daily, digital lives.



(Disclaimer: FFMPEG is used in terminal, so it doesn't have a nice GUI (graphical user interface) like the GIF above does**)**

- Editing Videos:
  - Cutting
  - Muting
  - Combining Videos

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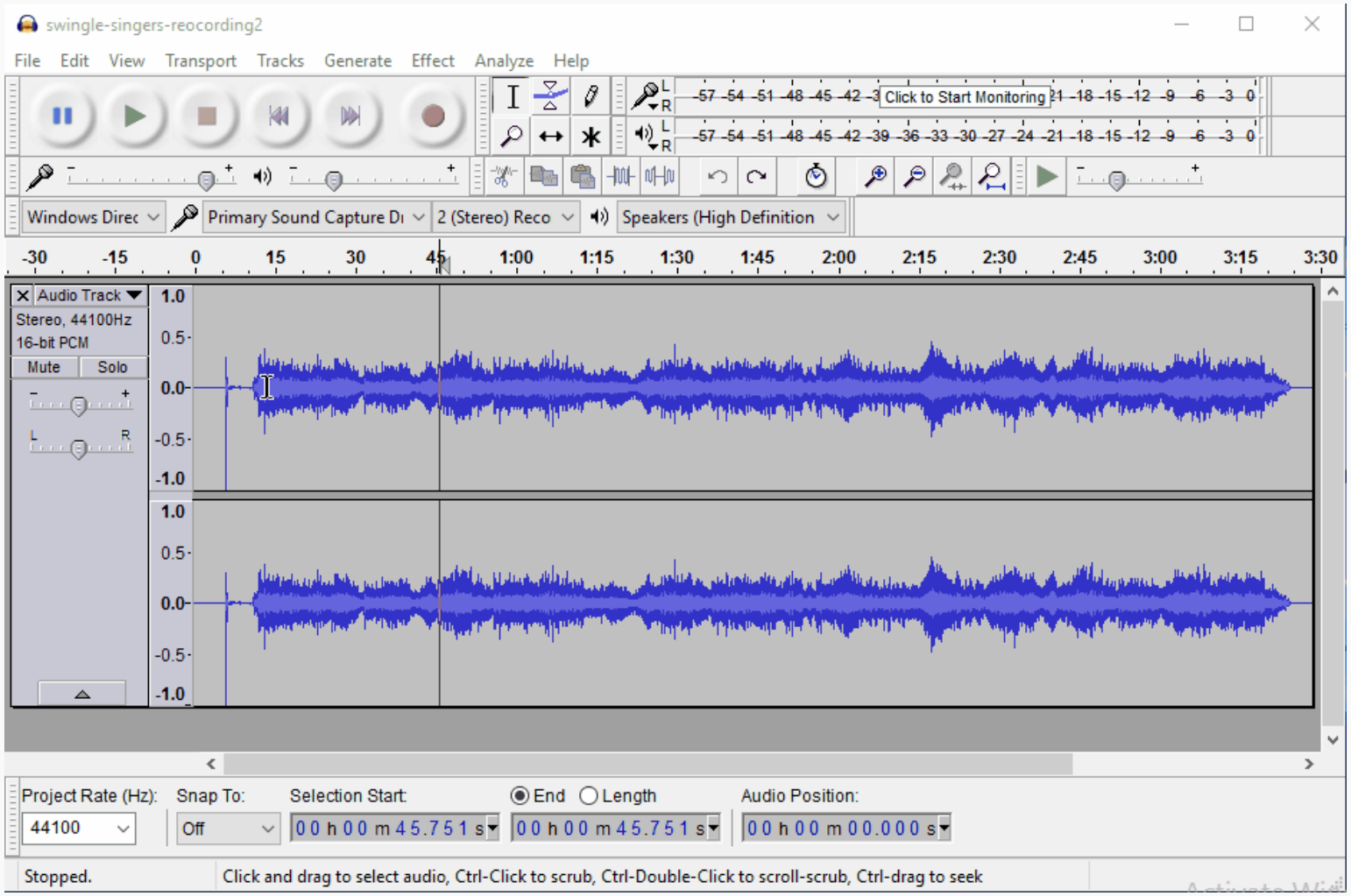

(Disclaimer: The GIF above shows Audacity not FFMPEG. FFMPEG would do the work of getting that audio (previously a video) that is being transformed there.**)**

- Converting Videos:
  - From MP4 to whatever (or vice versa)

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- From videos to images (or vice versa)
- From Video to Audio
  - This is pretty useful to me in particular because I've tried to make music in fruityloops and have used online converters that could potentially cause harm to my laptop. FFMPEG does this without the risk, so if there were a video with a particular ad-lib I like, I could download (there is an ffmpeg command for downloading YouTube videos as well) it and convert to audio (mp3 or others).

Let me know if you are interested in presenting something cool as well.

REU|2018 Leave a reply

Origami and Metaphors

June 26, 2018 ahmeda2

But not mine! (All artwork below is courtesy of Victoria, except for the paper airplane that can't fly and the paper finger made by Inshira. That was mine 🙂).

In the upper left you can see a frog family hopping around. This could be a metaphor for a professor and a graduate student (not sure exactly what that would be, but if you know tell me).

In the upper right, you see a badly constructed paper airplane. This could seen in the design, but also when tested the paper airplane failed to last longer than half a second in the air. There is probably a metaphor for it failing to do the single thing it was created for.

In the lower left, there is a paper finger (Inshira what are these called? Rasengan or something?). There is definitely some metaphor with this finger, but again the metaphors elude me.

Maybe, there is a larger metaphor about metaphors eluding me? Once again, I'm not sure what that would

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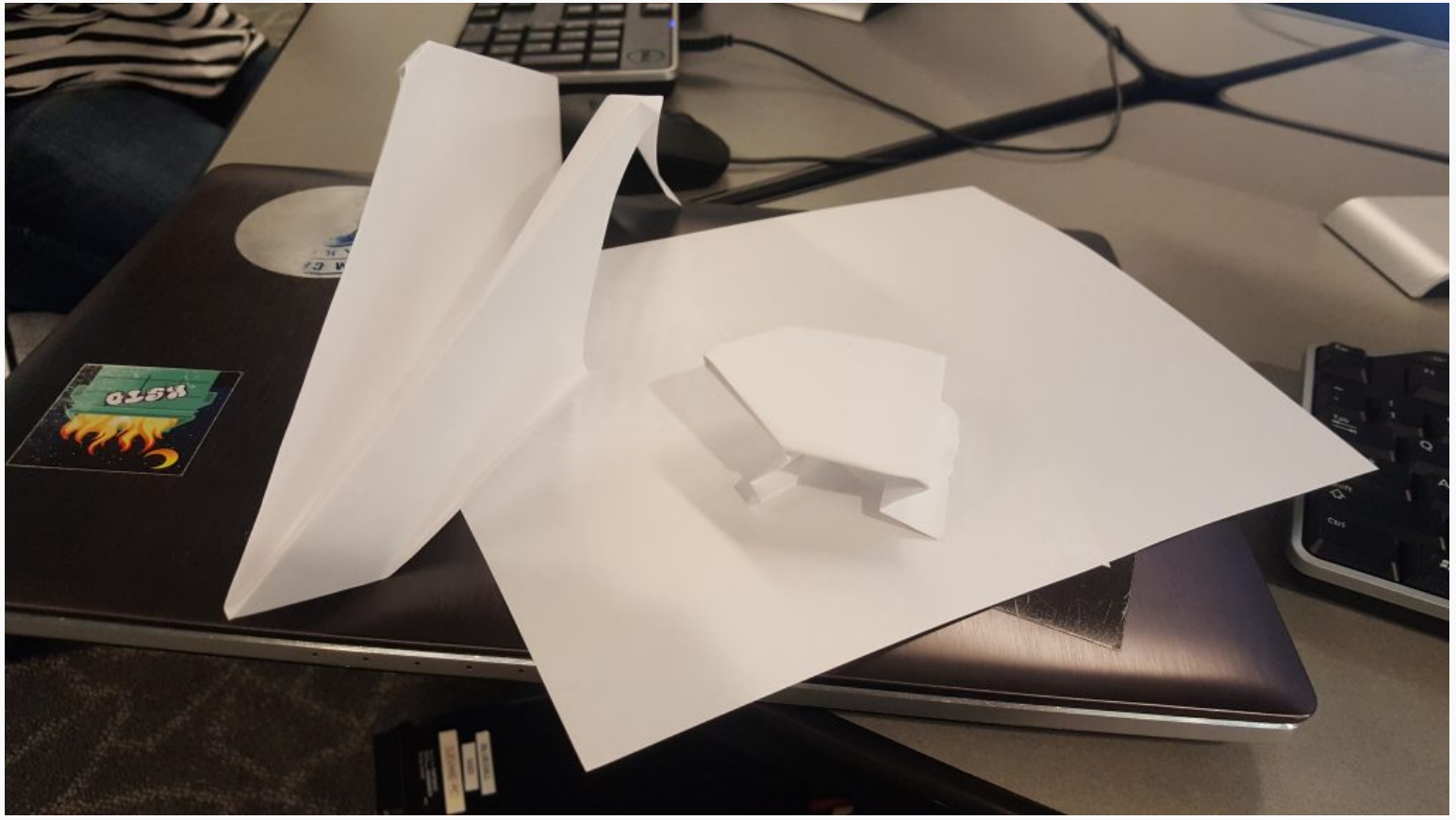

be (Research?).

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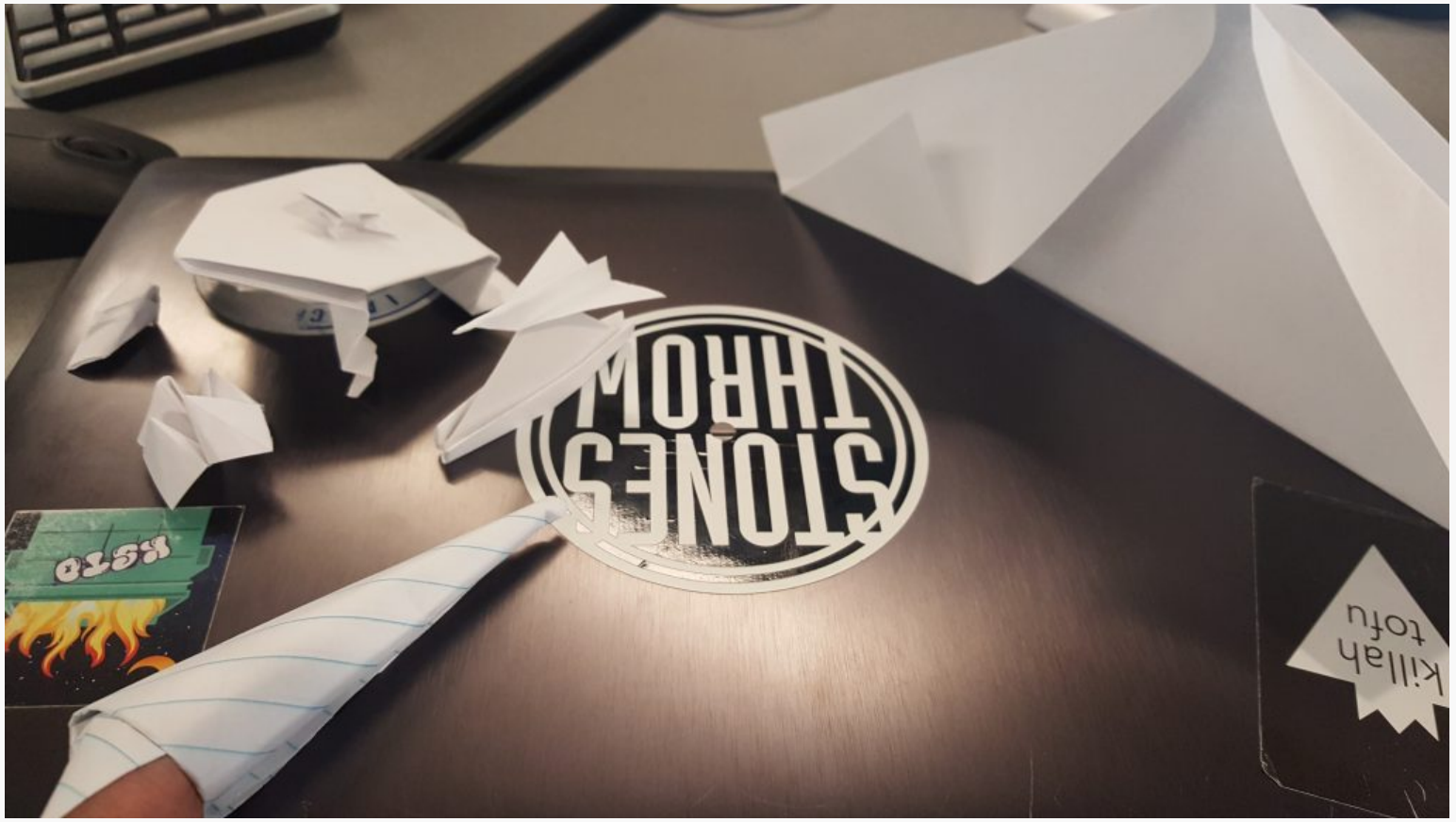

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Symbolism

June 21, 2018 ahmeda2

Or Not Symbolism

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I forgot to post this image yesterday. We were having an argument. Not about being racist, sexist, homophobic, or transphobic, but about the sizes of the milkshakes and whether or not a large is really worth the extra dollar. My argument was that the top (which makes the difference between the regular and large sizes) is basically just whipped cream and a cherry. So, it is not worth paying a dollar for just a cherry and some whipped cream in taller cup (less than an inch taller). Let me know if you agree or disagree.

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On a related note, I am getting comfortable in Ames. I didn't give enough credit to the town and I'm starting to realize that there's more to it than meets the eye. I have developed a bit of a routine which might get disrupted as I start staying longer due to an increase in research duties.

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Hyper-Hyper-realism

June 19, 2018 ahmeda2

A Portrait of Gabriel Kulp

Do you think this image is real? Hah, this image was CGI generated!

What about this one:

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Wrong again! This image was also CGI generated. The point here being you should never believe you eyes and that hyper-realism is the death of trust in your vision.

~Satire Over~

Okay, hyper-realism is actually a bit of scary issue. Imagine you are watching the news and they use false imagery calling it live feed. For instance, let's say CNN had a fake reporter live on a dangerous scene, but in reality they lied and used green screen to place their reporter in the scene. If you thought this example was to specific to not be true, you were right:

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LINK: https://www.cnn.com/videos/world/2014/03/07/exp-nr-vo-watson-russia-ukraine-ships.cnn

So even though I was joking about the topic above, I do believe this is an issue that should be discussed more. Let me know your thoughts on hyperreality.

“We experience something called “the death of the real”: we live our lives in the realm of hyperreality, connecting more and more deeply to things like television sitcoms, music videos, virtual reality games, or

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Disneyland, things that merely simulate reality.” – Doug Mann on *Jean Baudrillard*

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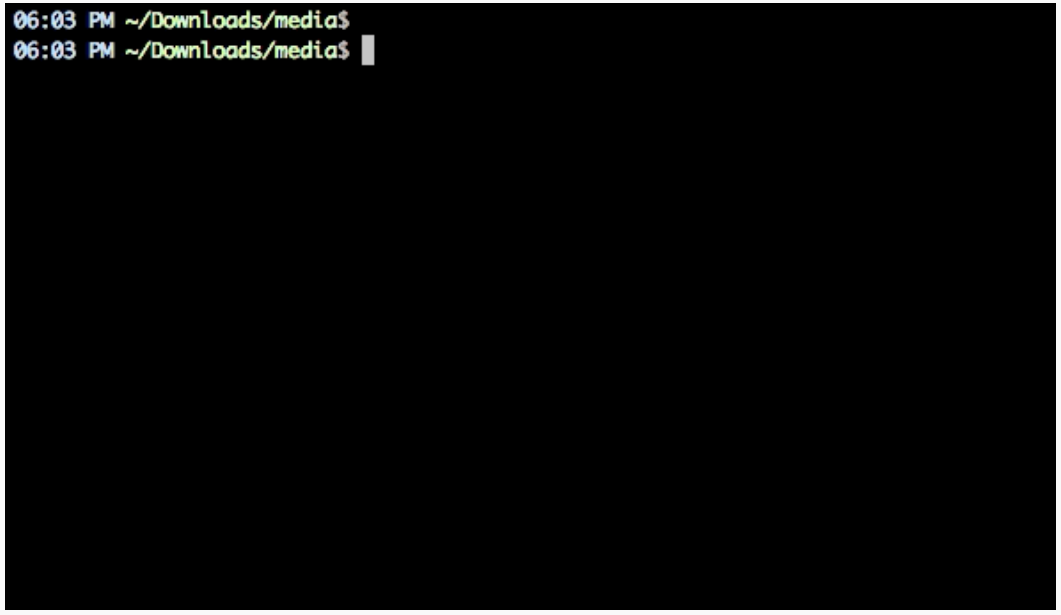
Using FFMPEG

June 19, 2018 ahmeda2



FFMPEG

I’m learning how to use ffmpeg mainly to convert videos into images. The image frames will be used in our dataset that trains the machine learning algorithm. (P.S. the GIF above is converting video to audio).

Algorithm

Hopefully, our algorithm will be able to annotate video data just as a human would. The video data for the TIMELI group consists of Traffic Incident Managers (TIMs) performing their usual work activity. The previous method for behavioral coding by user researchers included a manual process for logging different behaviors (the TIM is filing a report, the TIM is communicating to police by phone, etc). We hope to automate this process with a successful algorithm that does the same thing, but with more data. This will aid the user research process significantly allowing for more efficient interface research/design.

Quote of the Day: “The GIF is like our mind trying to understand everything” – Leilanie Morales

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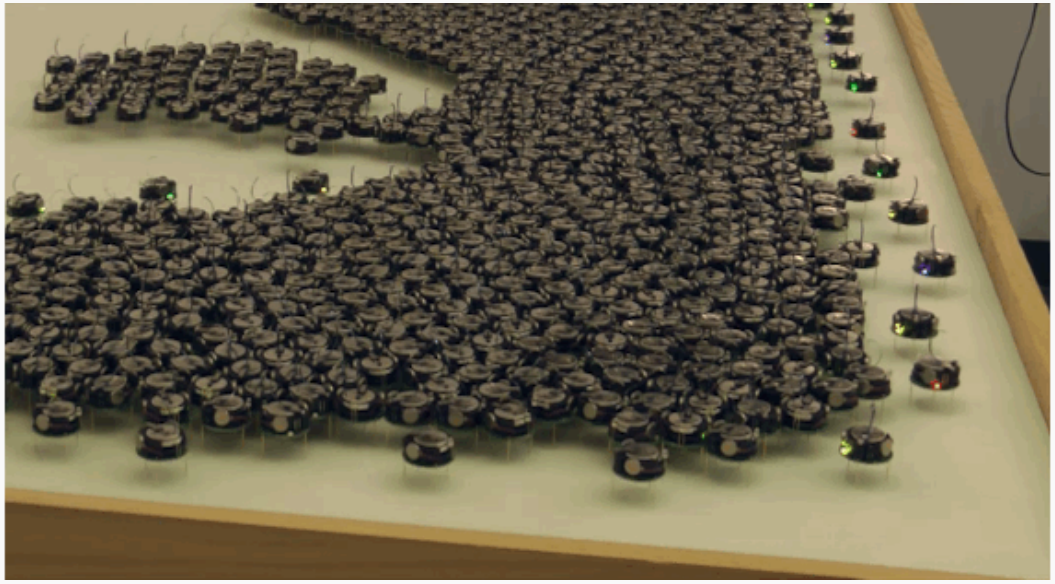

Poem

FFMPEG and JPEG,

Yesterday I hurt my leg,

An algorithm without rhythm,

The promise I renege,

Research research,

A lit review is near,

Research research,

Please comment the end of this poem

REU|2018 Leave a reply

Gaining Context

June 14, 2018 ahmeda2

“Always design a thing by considering it in its next larger context – a chair in a room, a room in a house, a house in an environment, an environment in a city plan.” – Eliel Saarinen

---

An important aspect of HCI is the idea of user-centered design. This includes gaining an understanding of users’ backgrounds. TIMELI researchers want to revolutionize the traffic incident managers (TIMs) do their

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work, but in order to do that we had to put ourselves their shoes (the teams from previous years had already done this, but it was important for us as well).

What TIMs Do

This past Wednesday we had the opportunity to visit Iowa DoT's Traffic Management Center (TMC). Although we weren't conducting formal contextual interviews, we did observe and ask TIMs questions that would aid us in understanding their work. We gathered a lot of information through

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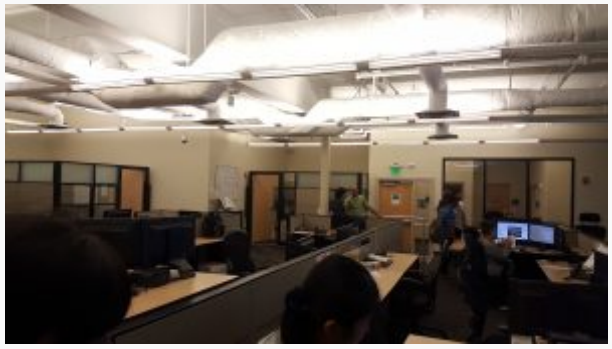
this process, but a main takeaway was redundancy in certain features. For instance, maps. Also, Jamiahus (Graduate Mentor), who has been working this project in previous years, noticed some changes with the interfaces. The main change was a new dashboard for TIMs that removed some issues with reporting incidents.



Purpose of Trip

As mentioned earlier, it's important for user-interface researchers to examine the background of their users. This goes beyond the software requirements and looks at specific features that would improve the users interaction with the system. Overall, this was a very fun and informative trip. I'm glad to have some real world experience with HCI/UX research.

REU|2018 Leave a reply

Machine Learning

June 14, 2018 ahmeda2

Quick Update: I've made my first machine learning model. This follows the Kaggle Cats vs. Dogs challenge. The image above shows that the overall accuracy of the algorithm is around 67% (ability to detect the object is a dog or a cat). This is just the beginning of TIMELI's machine learning process; hopefully by the end of the program our algorithm will be able to detect and classify features of behavioral encoding data via videos of Traffic Incident Managers (TIMs).

What's up next for TIMELI REUs?

We need to turn videos into frames of images for our algorithm to use as a dataset. We'll be using ffmpeg

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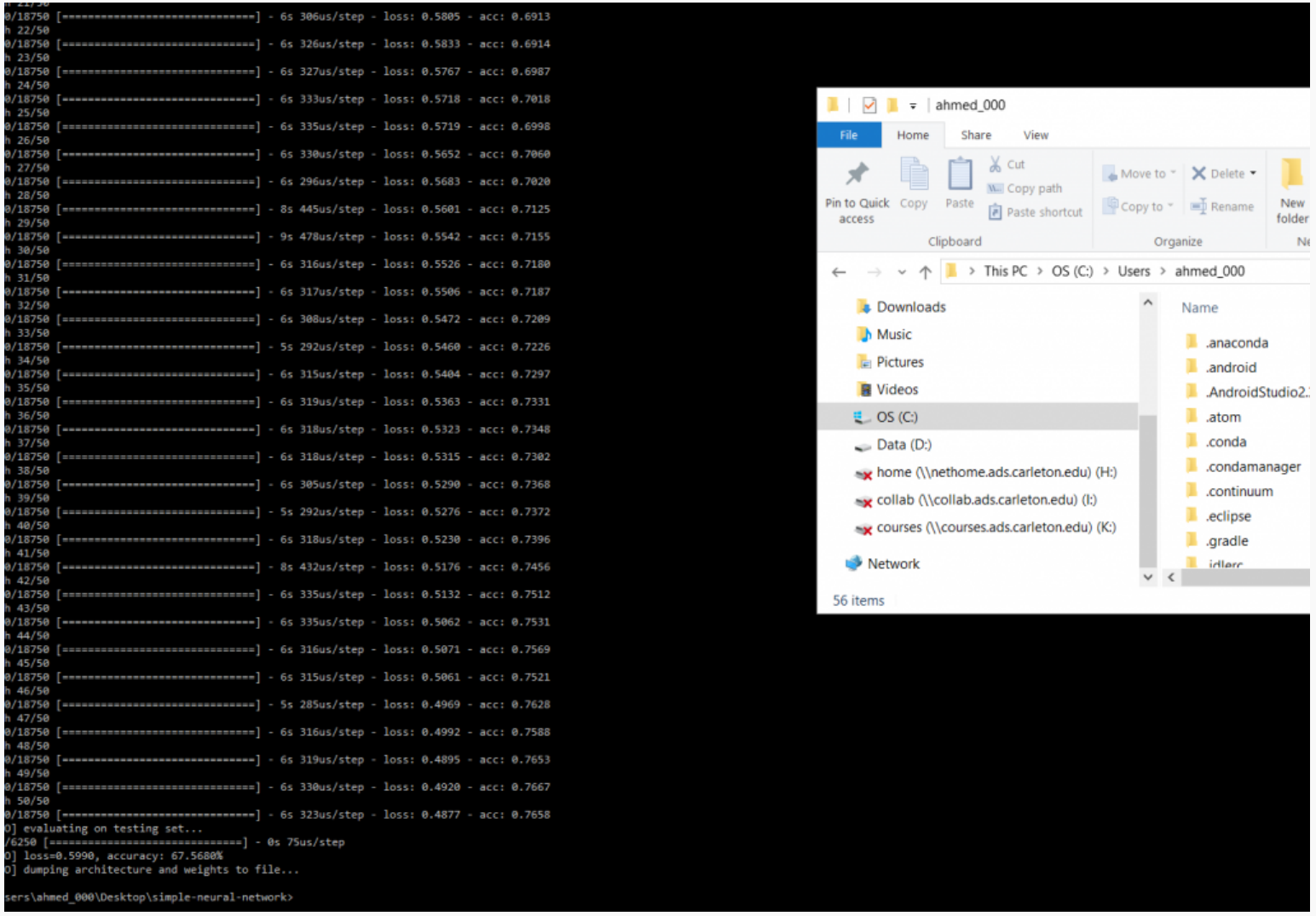

(which I don't have experience in) and I'm excited to learn how it works as well advancing our algorithm. Goodbye for now!

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Revisiting Intro to CS

June 11, 2018 ahmeda2

Today, I went down memory lane and looked at old code I wrote in python for my Intro to CS class. My team will be using python for our project and I wanted a bit of refresher. I looked at snippets of my code that I think could be useful for computer vision and machine learning problems. An interesting file I found was a graphics file that was provided by John Zelle. I never really looked too deep into the file, but after reviewing it further it provides a lot of information on programming with graphics in mind and would be a good practical resource. I don't have much experience with machine learning, so I'm interested to learn more (I have a tiny bit of experience with neural networks, but not much further). I will be using Anaconda for this project because it has many libraries that are useful for machine learning.

I forgot to post about this earlier, but yesterday we got to repair some bikes and bring some back with us. We also received bike locks to use, so transportation will be a lot better around campus. That's all to report so far, goodbye!

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BAD Interfaces

June 11, 2018 ahmeda2

A task for our introductory lesson in HCI was to find two bad interfaces (virtual or physical):

Online

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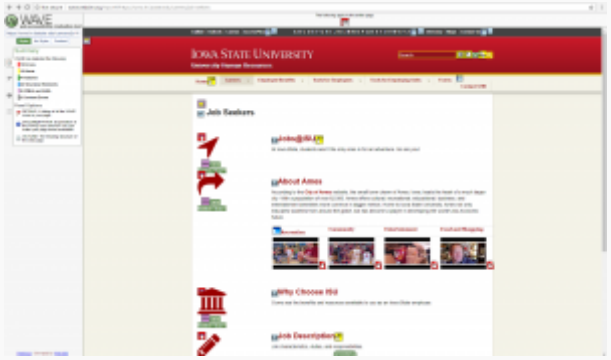

The above image is Iowa State University's 'Join' page. I wanted to show that usability issues are tied with accessibility issues. To demonstrate this, I used the WAVE web accessibility tool. The tool showed that the page had several issues like not having certain labels that are used by people with visual disabilities (text-to-speech tools).

Physical

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I have a desk lamp similar to this and my issue is with the knob up top. Instead of a similar on/off button, I must turn the knob to the correct direction to turn the light on. This was very annoying early on because I would always turn it to the wrong direction. The device required a user to rely on the working memory (it is always better to have users rely on recognition rather recall). A simple and better design would have been a button on the bottom that when pressed turns on and when pressed again turns off.

REU|2018 **1** Reply

📷 Stormy Days and Muddy Falls

I witnessed my second hail storm in Iowa a mere week later than the first one. Weather here is just as unpredictable as in Minnesota, but much more hail. My umbrella wasn't as effective as I hoped it would be and I also fell in the mud (cartoon style). See below for a reenactment:

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Others’ reaction while watching me (I’m looking at you Leilanie, Ohana, Victoria, and Teandre):

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That is all for today, I still need to recover (mainly my dignity). Goodbye!

June 7, 2018 by ahmeda2 Posted in REU|2018 **4** Replies

C++ plusplusplusplusplusplus

June 7, 2018 ahmeda2

Communication is key. This has been a recurring piece of advice when working in teams and generally throughout life. I believe TIMELI's (the group I'm a part of) really understood this in our meeting this past Wednesday. Although we had various interests, we worked through this by communicating and trying to find a middle ground between our interests and relevant work needed for TIMELI research.

Here's some more fun things:

Quote of the Day

"Things in life never come easy, you always have to fight for them" – Leila Morales

Here's a quick poem to wrap up the work day

Another day of C++,

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I’m excited and sleepy,

Writing Code, I know I must,

So I can’t be weepy,

Research research,

A problem I must solve,

Research research,

If you are reading this please finish the poem in the comments

REU|2018 **3** Replies

Coming Back to The First Week

June 5, 2018 ahmeda2

Wow, it is already week 2! I want to take some time to look back at the first couple of days.

Early On

I knew coming in the first week of the program would be difficult; I would be coming to a new environment (new state, new school, new people) and bringing my old along with me. By bringing the old with me, I mean homework and finals. I study at Carleton College which runs on a trimester schedule which means I am supposed to finish school in early June. I flew into Iowa for the VRAC REU on May 29 with a week of finals ahead of me.

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Still Pretty Early On, But Later

Yesterday was my last day of finals and I had finished everything on time. But, this had some repercussions on my experience in Iowa. I am still pretty unfamiliar with the area because I haven't had the chance to explore. The only places I had gone were the dorm, gym, and VRAC facility. We did go on a tour of the campus, but that isn't how I usually get accustomed to places; it usually takes some time and exploration (getting lost).

Now

I'm starting to get used to my surroundings! I went to Ames Summerfest and walmart which isn't much for most people, but coming from small towns (Portland, ME and Northfield, MN), I was pleasantly surprised. I got some groceries and effectively used the transportation system (which is free!). I've also started to game a bit more (my roommates have open doors for me in terms of gaming possibilities) and am excited and worried to see where this goes.

As for my research, we will be heading down to meet some Traffic Incident Managers (TIM) in Des Moines. Hopefully, they will provide information on their experience that is beyond what I've read in previous research.

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Virtual Reality is Taking Over the World ~ Summer 2018

June 4, 2018 ahmeda2

It's true. VR is no longer a far fetched idea pulled from science fiction novels. It is among us and it will prevail. I've provided proof below.

Evidence! All these people within arm-length of each other, but can't communicate. It is as if we aren't really in the same place. From a Dualist perspective, if you are not mentally in a place (your mind being occupied by the imagery in virtual reality), then you aren't in the place at all (the physical body doesn't matter). Is this worrisome, should we be scared? That is for you to contemplate. This is all I have to report for now. Let us prepare for a future that doesn't stray to far from VR-ridden dystopia. Gather all your XP now, you never know when it will come in handy.

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📸 Build a Tower Activity

Reflections on the ‘Build a Tower’ Exercise

I wanted to examine the purpose of the build a tower exercise we did on our first official day. First, I’ll talk about what the exercise was (and who won 🙂) followed by an explanation of its purpose and my reflection.

The Exercise

The build a tower exercise tasked us with building a tower (as tall as possible) within a six minute time period (I think). The only tools we had were dry spaghetti and Jet-Puffed marshmallows. Our team (Timeli) devised a plan to create a pyramid tower with a square base. We executed our plan swiftly and were left with plenty of time on our hands, too much time. Although we won, we were told to reflect on what we could have done better and how we could have used the last three minutes more effectively.

The Purpose

The goal of the exercise was to encourage strong collaboration skills which include time management skills, work delegation, and effective communication. The idea was that learning team-building skills in minor situations could translate to more major projects.

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The Reflection

I believe issue of time restricted us in that building the tower became a race against others and time. The extreme time constraint defeats the purpose of exercise because if participants feel like they *should* be rushing, some might prioritize speed over other things such as engineering (bundling the pasta makes it sturdier). More time for this exercise would support collaboration skills because it would resemble actual team-oriented projects whereas a six minute time period would promote a “move fast and break things” attitude—the opposite of the exercise’s purpose. I’ve seen variations of this exercise that explicitly tells participants about different stages such as planning, building, etc. But, the goal here was to see if we, students, could come up with that ourselves. I believe a good way to examine this would be to keep the conditions the same, but provide more time.

June 2, 2018 by ahmeda2 Posted in REU|2018 Reply

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