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2.1 Sheldon Branch

Sheldon Branch CSC 131 8/27/18 An experience that gave me a sense of accomplishment was taking piano lessons from my second piano instructor, David Felton. Davids teaching style was very different from that of my previous piano instructor, Tami Moates. Tami was very gentle and taught at a slow pace, whereas David taught at a rigorous pace and expected his students to put in enough effort to keep up. Because I was used to a much slower pace, taking lessons from David was a great challenge. I often considered looking for a new piano instructor but there was always a part of me that enjoyed the challenge. Eventually, I adjusted to the newer, faster pace, which allowed me to greatly improve my piano skills. Adapting to Davids pace was very fulfilling to me and left me with a feeling of pride. I was happy that my hard work paid off and I could see the results first hand. This experience also taught me about the learning environment for which I am best suited. I learn best when there is little leeway given because I am a chronic procrastinator. My work ethic is not as polished as I would like and I feel that a disciplined schedule would greatly assist in improving it.

2.2 Bram Dedrick

In the winter of 2017 my mother baught a farm to board her horses. We had a farm when I was very young, but I was never involed much because we moved to a house in a village when I was only five. I was old enough this time to help around the farm, the only problem was when she baught the farm there wasn't much of a farm to use. The piece of property had a rundown barn, a small house, and some small wire pastures that the prievious owner used for their horses. This place needed a lot of work and as soon as the snow began to melt, we began to work. We had to start with he barn as my mom was currently boarding her horses in a barn rather far from our house. The interior of the barn

was in complete disrepair, the stalls where falling over, the tackroom was just the smallest stall and the extirier doors were somewhere near the road. I have always been rather handy put referbishing a project like this was something that I had never done but was extremely eager to get to work. We started by cleaning, because the entire barn was coated in a thick layer of dust and dirt, which essentially just meant taking a pressurized hose and spraying down the whole thing. We then went in and began to install new light fixtures, because the old lights were old and decrepid. After we could see what we were doing thanks to the help of our new lights, we began to rip down the stall walls in disrepair and put up new walls in their place. We then began construction of an actual tackroom and wash stall. To start, be ripped out three stalls at the end of the building and put up more insulated walls so the tackroom would stay at room temperature, no matter what time of year it was. In the tackroom we made a small bathroom and a put in racks along the wall to hang the saddles and other riding equiptment. After the tackroom was complete we lined one of the remaining stalls with metal siding and added an additional drain to the center of the floor. This was intended to be for washing so we also put in a hanging hose opperation used to spray down the horses when they came in dirty. All of the big projects were then complete with the instalation of thw wash stall, and with a few more small tasks we has had a very nice and referbished little barb. Outside of the barn there was still plenty of work to be done. First we had to rip out the old wire padocks that the prievious owner used and we began to look at what we wanted to have in its place. We settled on hiring a company from kentuck to come up and install nearly a mile of Kentucky Four Board fence post, all painted black. We also hired a more local conteactor to build a small run-in, a three sided building with a sloped roof, to give the horses a place to go should the weather change in a instant. When both of those tasks were going on outside, I began my work in the small house, referbishing it because my sister was planning on moving in with her the fiance. I began by ripping up the old carpet, to reveal nice hardwood floors, just in need of some light maintanence. I then turned my attention to the bathrooms and kitchen where I ripped out the old cabinets and fixtures. To unify the house we decided to paint the entirety of the house in an off-white, so I began the process of laying down coat upon coat of primer in an attempt to cover the poor paintjob in very ribrant colors. In an effort not to get any paint anywhere we didn't want it I began to tarp and tape off numerous areas. The paint was aplyed, most places took only two coat but some of the more obnoxiously colored rooms to many more. New cabinets, new fixures, new appliances began to emass in the garauge as we painted just waiting to be installed. I didn't know much about electrical or plumbing work before this project, but I got plenty of practice installing sinks, faucets, toilets and a medly of lighting apparatouses. When all had been installed and I took a step back to look at the work I had done that summer I realized I learned a host of new things, just by doing it.

2.3 Tony Ferenzi

During all four of my high school years I was a part of the Marist marching band, specifically a percussionist. It wasn't entirely a marching band as we would switch to an orchestra during the winter and spring after the football season was over. I played the bass drum during the marching season and that is the biggest drum on the field that is attached to a harness, if you didnt know what a bass drum is. Our band director was probably one of the most unique individuals I ever knew. He could be your worst nightmare and your best friend all in one day. He is really a nice guy, but teenagers will be teenagers and sometimes he has to yell or make us run laps on the track to keep us in order. My band director actually had multiple ways of teaching and practicing. Not onlydid we practice everyday, but he would make the band do the same formation over and over again until we could do it in our sleep. The most iconic phrase that anyone in the band will tell you after running a formation is the 'go back and do it again' that he would tell us for the twelfth time that day. He would also give us weekly homework assignments to complete, scheduled sectionals every week, and the monthly three hour practice videos we had to complete for a grade so our band director knew we were practicing at home. It may not have been a popular or fun way of learning or practicing, but it definitely got the job done and made us one of the most popular bands in the area.

2.4 William Golden

I have had a wide variety of learning experiences outside of high school classrooms. My biggest learning experience took place between the summer of 2016 and summer 2018. Shortly after graduating high school in Des Moines, Iowa, I signed up to become a missionary for a religious group in South Korea. The requirements for becoming a missionary were that I must speak proficient Korean and must know and teach many church doctrines fluently. My training began in Provo, Utah, in an institute called the MIssionary Training Center (MTC). I spent a vigorous 9 weeks there studying both the Korean language and the sprictures. My schedule was similar throughout the 9 weeks; 6:30am wake up, 8:00am study personally, 9:00am study with teachers, 12:00 pm lunch, 1:00 pm personal study, 2:00 pm study with teacher, 5:00 pm dinner, 6:00 pm practice teach, 8:00 pm study, 9:00pm go to dorms and prepare for bed, 10:30 pm lights out. There as little to no recreational/free-time, but I really felt I learned a lot there because they repeatedly forces me to study in several different ways each day, then practice what I have learned immediately afterwards. After 9 weeks of being in the MTC, I was shipped off to Korea to begin proselytizing in the Korean language to the Korean people. I was still following a very strict schedule of scripture/language study in the morning, lunch, then from noon to 9pm I was outside or in a church applying what I learned that morning though forms of teaching and presenting. Quickly learning material then applying it

immediately afterwards was an exteremely difficult yet rewarding process. I was able to master the language of Korean and become a scriptural scholar in less than 2 years. However, it was an everyday struggle of speaking and teaching. I made countless mistakes and had to push myself past what I thought I was capable of In the end I was able to grow and learn a lot.

2.5   Yuan Hong

To first think of studying outside the school, I studied calligraphy. Chinese calligraph art began in the stage of the beginning of the Chinese characters. And it is a tradition still toda, that people still write calligraphy for festivals and families. Calligraphy is a interesting field of studying, to just study calligraphy is easy to do, but in fact, the learning of doing good at calligraphy needs a long time of practice. It is very difficult to make the level of calligraphy reach a certain height. To be good at this type of art, there are six types of difficulties I need to solve: difficulty of using the pen, difficulty in the structure, difficulty in the ink method, difficulty in the chapter, difficulty in the mood, and at last, difficulty in the unity. After accomplishing the basics of this art, I was told by my teacher that I need to imitate how these great calligrapher wrote before. At first, even imitating was hard for me, I could barely imitate these calligrapher's styles. There are many trails and errors and I have to stand at a table for hours everyday, and I feel pain from my legs and shoulder, it was a tough time. However, from that time on, I learned how to do something quietly for a long time, even though it was boring, I could endure this boredness and complete the work. Once I got better after years of practice, I can finally move on, to do things by my own styles, but not imitating other people's work. It was a totaly different experience, I have to think of different styles and words to writing, and to be better from my friends who studied calligraphy with me. After that, every Chinese Spring Festival, I write calligraph arts for my family and my friends, and they all liked them a lot. It was a good piece of memory.

2.6   Easton Jensen

A little bit about me.

I have come to experience and learn from family friends. for this story they are mormon while I happen to be catholic. However I went to church with them for the last half of my junior year. After church I would go to their house for lunch. I learned a lot from them by just being near them in church and also going to their house to eat and mess around. They taught me not to look through a window and see how they live. It showed me to not judge people on their religion or how they live day by day. Another person I look up to is my football coach. He has taught me the importance of relationships and brotherhoods. My best friends are all on my football team, even though with a small school all my friends played on every sports team, and they have shown

me that people need to be in your life so u can pick people up when they are down because they will do the same for you. One story happened in my senior when a fellow senior tore his achilles and spent the whole season not being able to play. He sat out all camp and had to watch on the sidelines. That year we all came together as a family and performed for him. We took it into playoffs but ended up losing in the semifinals. That year however we all played for one reason and I want to continue that with this school and people I see around campus.

2.7   Rodrigo Martinez

Rodrigo Martinez Beauty and Joy of Computing 8/27/18

Throughout my academic years I had various types of learning experiences. One example is when I took orchestra in high school. The way of learning was very different compared to your traditional classes in which can include some reading, writing, etc. I played the violin at the time and was taught how to play and read notes. You only begin to actually learn how orchestra works when you begin to play the instrument. Eventually as time passed I became invested into the world of computer science. I decided to take an after school class on coding to understand how it works. From experience, in order to learn and understand how coding works you will need to do it Hands-on. Reading a book on coding will not help as much. It is more of a learn from your mistakes method type of learning. I wanted to understand more of coding so I began to learn by myself by looking for sources that help how to code such as w3schools.com and videos. I implemented the things that I learned into a small video game project that I am creating. This helped me even more to understand how coding can be used and how it works. Going through the task of figuring out what causes the script to fail is what brings the learning process together. It helps validate what can work and what you should remember in coding. Even if it means memorizing to put a simple bracket in one of the lines of the script. In my experience, the best way to actually learn from something is by fixing the mistakes made along the way. I dealt with this in my orchestra class as well as my computer science classes I took. Yes, there may be alternatives to learn these things but learning it this way will improve yourself academically/socially/etc.

2.8   Matt Morrical

2.9   Ella Nelson

0;256;0cIn sixth grade, I joined competitive math, easily the most nerdy thing I could say about myself. Then again, it was even more nerdy when I started winning all the time. My Junior year, I made a small computer game mostly for my own enjoyment, but my librarian convinced me I should submit it to a contest. I won somehow and ended up with a thousand dollar grant and a trip

to DC. In high school I also participated in science fair three out of four years and continued my math team victories. Then one day I decided I wanted to go to college and now this is the one I'm going to.

2.10   Koichi Okazaki

Koichi Okazaki

CSC 131 Writing Assignment

Speaking of my athletic experience, I used to play soft tennis -which is one kind of tennis originated in Japan and popular among Asian countries- for three years in my junior high school. Usually in japan we have a sports camp which is held by the school in each summer, and every athletic clubs participates the camp for about 1 week. These camps are aimed to reinforce skills such as teamwork, technique, physical strength and mental strength. Thus, the practice during the camp tend to be harsh, since we have to practice for long time (about 9 hours) in the very high temperature environment. The content of the practice starts form the fundamental training such as running, and it gets to be more advanced training and eventually we do some matches. According to the result of the daily match coach decides the regular members of the team. Therefore, the mental stress for students will be large. However, since we really concentrated on our spots for a week and did hard work with basic practice and by having the chance to apply it. I felt my technique, physical, and mental strength improved steeply than practicing for one week in usual way, and overcoming the difficulty with my teammates brought me the improvement of coordination.

2.11   Jakob Orel

My past learning has been shaped by my teachers and my interests. I have participated in multiple online courses, athletic teams, band, and academic team. In my online courses, I learned independently about psychology and the foundations of information technology. The classes required discussion on an online forum with other classmates and daily reflections or quizzes. These quizzes or applied concepts would relate back to the ideas in the textbook. Being a member of the cross country team in high school allowed me to learn more about myself and my limits. I worked closely with the coach and was motivated to train and lift weights outside of mandatory practice. Participating in band allowed me to develop as a leader and hone my skills. Playing trumpet in the highly ranked jazz band required me to practice and learn the instrument on my own. I had to listen to other musicians to further develop my previous skills. I was able to change the style I play trumpet in order to achieve a better sound while still using the scales I had previously known. As a member of the academic team in high school, I had to attend practices to learn the material. Success in the quiz bowls required all members to have a basic knowledge of

most topics. My band teacher, science teacher, and my coach have influenced me to learn in a way I can build on my past knowledge or skills in order to become a better person.

2.12   Marcellus Parks

Marcellus Parks 8/28/2018 CSC131 My most successful learnning expiriences have been where I have been immersed in an environment. I have been to many football camps and coaches clinics. These taught me the successful concepts and strategies of the game. most of thesesthings are useless until I know completely how to use them. Its trial and error way of learning helps one pick up things up quickly. It constantly test your knowledge and reactions. I am also an amaeteur musician. I like to teaching myself to play the guitar, and piano. It constantly causes me to use my prior knowledge of chords and melodies to create some new songs. I used to be a part of a band, playing the clarinet. Learning music was a little more difficult then, because I did not have the luxury of being able to fail and try again all the time. There were concerts and performances only a short time after receiving new material to play. I have taken a few college courses I do not have credit for. This was actually easier than other classes sometimes. They allowed me to learn in the way that best suited me and gave me pleny of time to do it. The class was over an entire school year and not just a semester like in college. Even after the seemingly easy learning the class still sent me into a workshop where I had to use the knowledge that I had just gained to make something on a CNC machine, 3D printer, etc.

2.13   Lydia Sanchez

Even though I did not know this at the time, but Girl Scouts would really change my life. When I joined in second grade I thought this would be just a fun activity to do. What I did not know was that I would still be a Girl Scout until the end of my senior year in high school. Our leaders recently revealed that they had a master plan to get us to go on a big trip at the end of our 5th grade year, when we were in second grade. They prepared us by taking us camping and teaching us to be independent but they always did it in the most fun way. Until one meeting our leaders brought up the idea of a big trip the summer the summer after fifth grade to Glaicer National Park. We set off the first of August to Glaicer. We drove up to Minneapolis and get on a one and a half day train to Glaicer. When we got there we dropped our stuff off in our room and explored a little before dinner. We went down to Lake McDonald,it was right next to where we were staying,and it was a unusual lake. What made it so unusual was that was the lake was the lake was to different temperatures split in the middle because of the different sources of water coming into the lake, one warm from a river and one cold from the glacier. The next days were filled hikes, huckelberry products, jammer buses and a little community service, but

the best thing was the snowball fight we had on the logan pass. We went up the mountain to logan pass and it was sunny and about 60 degrees but there was snow on the ground. We hiked a little and then on way back we had a snowball fight, this is so memorable because how many people can say that they have a snowball fight in August. This trip was the first of many as later on we went to the Boundary Waters, the Black Hills and many other small camping trips. Girl Scouts has taught me many things like leadership, independence and a love of travel. Girl Scouts has taught me changed me so much I would not be here without it.

2.14   Tiff Serra-Pichardo

During ninth grade I attended a trade school the second half of the school day. During my time at this trade school I studied electronis engineering and nanofabrication. This class gave me my first experience working with circuits and general engineering. I was able to practice my soldering skills and work at creating simple small electronics. The class allowed me to explore my interest in electronics engineering. It gave me the opportunity to create a life long passion for creating electronics and soldering.

2.15   Austin Stala

2.16   Nicole Trenholm

Growing up I was never the biggest follower of music. I enjoyed listening to it but I never made a habit of listening to it. That was until I started high school. I started listening to more and more music and now I really enjoy finding new songs and artists. That being said I am in no sense musically inclined. The only instrument I have ever played was the recorder which I did not exactly excel in. Sports was always more of a focus for me. All my life I have been playing soccer and I am now fortunate enough to be playing it here at Cornell. Throughout my life I have gone to many camps and tournaments through soccer, either with my school team or with my travel team. It always acted as an escape for me and allowed me to express myslef while also learning new life skills. The sport has taught me about teamwork, leadership, accountability, and persistence. Through soccer I also participated in strengthening activites that included lifting weights and agility drills. These helped me better prepare for the soccer season as well as learn more about the body and how I can keep myslef in the best shape possible.

With soccer being such a big part of my life, it is where I met some of the most influential people. One being my middle school soccer coah who was also my teacher in eighth grade. He helped me improve myself on and off the field. I learned lessons from him that gave me a new perspective in life. From him I began to understand that I needed to have condifedence in myslef because that

only opinion of you that matters is your own. Participating in a team with him being the coach I grew so much as a person and I gained many skills that I use both on the field and in the classroom.

Soccer has also given me many opportunities to help others and meet new people. In one way being that I was able to become a referee for youth soccer teams and act as a mentor for the kids that wanted to learn more about the sport and how to play it. I also had chances to participate in volunteer work with my team. We took part in activites such as helping out at soup kitchens, collecting money and toys for children in need, and showing appreciation to the leaders of our community such as the firefighters and police officers. Through these activites I learned how to better myself as well as how to better the area around me with the help of others.

One of the most memorable activites we did is when as a team we participated in random acts of kindness wewk. This was a time when we, as an organiziation, got together and thought of small tasks that we could do to better at least one persons week. We did small acts such as complimenting strangers or helping someone carry their groceries. There was also larger activites we did such as going to a local soup kitchen and interacting with the people there and learning about there stories and experience. This gave me a new appreciation of my own life and all the people I am fortunate enough to have supporting me. The team as a whole found what we did as a life changing event and so we countinued to find new ways to help others while learning about how we can improve ourselves.

2.17 Maddy Weaver

During my sophomore year of highschool, I created a club with my friends called Cinema Club. One day after school, my friends and I were taqlking to our English teacher, Mr. Mclain, who was also our class advisor. We were talking to him about how there were so many things in the world that we didn't know and weren't taught in school. Somewhere in the midst of this conversation, we had the idea: a club were we watched movies that were important, had important messages, and generally impacted the way we thought about different things. At some point, we decided on the name Cinema Club and actually got this club started. This was a huge learning experience for me not only in terms of what it takes to start a club, but also because the content in the movies we watched was very valuable. Some of my favorite movies we watched include Short Term 12 and The Fundamentals of Caring. Along with watching weekly movies, we also attended the Beloit Internation Film Festival yearly in Wisconsin. That experience has been so meaningful for me because we watched both local and internation movies and got talk with many directors and actors/actresses, some of which have starred in/directed famous Hollywood movies.

2.18   Peter Weber

Best learning experiences One of my best experiences in learning is when I went on a hiking trip during the summer of 2015. I went with my boy scout troop to New Mexico for a ten day backpacking trip. The trip was fun but very hard and we had very little time to do anything other than hiking or sleeping. Two years later, in 2017 we went again and this time we were better prepared for what we would face. We got up earlier in the morning and had practiced packing and unpacking so we did not waste time in the morning or afternoon setting up or taking down our camp. Because we were so much more efficient with our time, we had plenty of it left over to get extra rest or have fun. Because we spent less time working during the day, we also had more energy when we were done hiking. The extra energy would go into whatever we wanted or would be saved for the next day of hiking. The second trip was much more enjoyable and was much easier to do than the first one. The thing that made the difference is that we were much more prepared for the second trip. This taught me that if you are ready for it, you can face anything. Another thing that taught me this lesson is when I went camping in the winter. We slept outside on a night where the temperature was -20f and the windchill was -40. We were able to survive, and actually be comfortable, because we had what we needed to stay warm. This also taught me that whatever you are going to face, weather it is camping outside in the cold or going to a new school, it can be easy if you are prepared for what is going to come.

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(Yuan Hong) Add big data tools to pharmacometric problems are new. Models are evaluated based on preset scenarios, That uses different variables, and result shown that machine learning methods are doing much more better than the old method they've used. Also machines aren't sensitive to data size and cencoring rates.

[35] Alison Gopnik. Making AI more human. *Scientific American*, pages 60–65, June 2017.
(Sheldon Branch) This article discusses the mindset of a child. It proposes that AI can learn to think better by analyzing how children think.

[36] Alison Gopnik. Making ai more human. *Scientific American*, pages 60–65, June 2017.
(Tiff Serra-Pichardo).

[37] Samuel Greengard. Gaming machine learning: game simulations are driving improvements in machine learning for autonomous vehicles and other devices. *ACM*, pages 00–00, 2017.
(Easton Jensen).

[38] Ashraf UI Haque. Wind speed forecast model for wind farm based on a hybrid machine learning algorithm. *International Journal of Sustainable Energy*, pages 38–51, January 2015.
(Tony Ferenzi) Wind power is an incredibly useful source of energy that is cleaner and cheaper alternative to fossil fuels. Yet wind is a very challenging force to calculate the speed of and if calculated wrong, it could raise the price of using the system. So a hybrid machine learning system called STWSF was created to efficiently counter this problem. Using a variety of options and tools, STWF reduces the uncertainty in difficult wind patterns. It is still currently being developed to be able to calculate even more possibilities, like humidity and other forms of weather.

[39] Reed Hastings. Trust the algorithm. *New York Times*, pages A1–A4, June 2017.
(Maddy Weaver).

[40] Brian Hayes. Delving into deep learning. *American Scientist*, pages 186–189, May/June 2014.
(Jakob Orel).

[41] Douglas Heaven. The line between hate and banter. *New Scientist*, page 12, October 2017.
(Jakob Orel).

[42] Jeremy Hsu. For sale: deep learning. *IEEE spectrum*, pages 12–13, 2016.
(Easton Jensen).

[43] Cai Huang. Detailed record open source machine-learning algorithms for th prediction of optimal cancer drug therapies. *PLoS ONE*, pages 1–14, October 2017.
(Marcellus Parks).

[44] Nicolas Papernot Ian Goodfellow, Patrick McDaniel. Making machine learning robust against adversarial inputs. *Communications of the ACM*, pages 56–66, July 2018.
(Sheldon Branch) This article suggests that AI will be much more effective if they can learn from their mistakes.

[45] Jose M. Inesta, Darrell Conklin, and Rafael Ramirez. Machine learning and music generation. *Scientific American*, pages 87–91, July 2016.
(Sheldon Branch) This article discusses the possiblity of AI generting music. It presents several subtopics, such as the music representation and the structural coherence of the music through machine learning.

[46] Nicolas Jaccard. Record detection of concealed cars in complex cargo x-ray imagery using deep learning. *Journal of X-Ray & Science Technology*, pages 323–339, March 2017.
(Marcellus Parks).

[47] Dysart Joe. Artificial intelligence: Not your father's toolbox: Some new artificial intelligence business tools to help park and rec agencies. *Parks & Recreation*, pages 72–73, Aug 2017.
(Austin Stala) This article talks about how AI and Machine learning can be used to help with apps and website design. The use of AI can also help monitor website traffic to help cut costs.

[48] Karen-Inge Karstoft, Issac Galatzer-Levy, Alexander Statinikov, Li Zhiguo, and Arien Y Shalev. Bridging a translational gap: Using machine learning to improve the predictions of PTSD. *BMC Psychiatry*, pages 1–7, 2015.
(Nicole Trenholm).

[49] Micheal Kearns and Umesh Virkmar Vazirani. An introdutction to computational learning theory. *The MIT Press*, 1994.
(Nicole Trenholm).

[50] Omar F. Khan. Artificial intelligence in medicine: What oncologists need to know about its potential—and its limitations. *Oncology Exchange*, pages 8–13, November 2017.
(Tiff Serra-Pichardo).

[51] Raffi Khatchadorian. The doomsdaaay invention. *New Yorker*, pages 64–79, November 2015.
(Lydia Sanchez).

[52] Raffi Khatchdourian. The doimsday invention. *New Yorker*, pages 49–64, November 2015.
(Bram Dedrick).

[53] Will Knight. Your driverless ride is arriving. *MIT Technology Review*, pages 34–39, Nov Dec 2016.
(Peter Weber).

[54] Will Knight. Artificial intelligence that doubts itself. *Technology Review*, pages 11–12, Mar/Apr 2018.
(Austin Stala) This article talks about adding the ability for an AI with machine learning to doubt its conclusions. This is believed to be able to help an AI to come to better conclusions. This would happen because the AI would be able to consider other decisions rather than the one it deems most likely.

[55] Kashyap Kompella. Can machine learning help fight fake news? *Econtent*, pages 40–40, 2017.
(Koichi Okazaki).

[56] Kashyap Kompella. Can machine learning help fight fake news? *Econtent*, page 40, Sep/Oct 2017.
(Rodrigo Martinez) Todays social media can be filled with a bunch of fake news. In order to fight back against this we at least should implement machine learning. Although with machine learning we have many possibilities, we also have many limits. Not all bots/AIs can easily detect whether theres a fake article or not. Sometimes it is up to us to figure if something is false or not.

[57] Utku Kose. Are we safe enough in the future of artificial intellegence? *BRAIN:Broad Research in Artificial Intellegence & Neuroscience*, pages 184–197, May 2018.
(Yuan Hong) Nowadays people have anxiety that artificial intellegence may take over humanity. So people ask if they are really safe living in this environment. The author improve the awareness that poeple should notice the sciences around them, that are taking role of mankind.

[58] Koan Koseler and Matthew Stephan. Machine learning applications in baseball: A systematic literature review. *Applied Artificial Intelligence*, pages 1–8, february 2018.
(Nicole Trenholm).

[59] Marina Krakovsky. Accelerating search. *Communications of the ACM*, pages 15–16, July 2016.
(Peter Weber).

[60] Diana Kwon. Self-taught robots. *Scientific American*, pages 26–31, March 2018.
(Tiff Serra-Pichardo).

[61] Steve Lohr. A profitable idea from a victory on 'jeopardy'! *New York Times*, page P1, June 2012.
(Maddy Weaver).

[62] Susana Lopez-Aparicio. Webcrawling and machine learning as a new approach for the spatial distribution of atmospheric emissions. *PLoS ONE*, pages 1–15, July 2018.
(Yuan Hong) There are two ways to collect data in atmospheric science. It is used collect information that used as emission inventory. Which for residential Wood Conbustion. One way is to extract online data systematically. The second way is a model trained that could learn on its own by recongnizing images. Increased amount of data, add significant value to the application of emission sectors.

[63] Robert Lucky. Are engineers designing robotic replacements? *IEEE Spectrum*, page 27, May 2016.
(Rodrigo Martinez) Robots are designed to make our lives easier or at least simplify some work for us. However, with technological advancement Robots are getting smarter. Is it possible for robots to replace humans in jobs. Frey and Osbornes information shows that it is a possible thing to occur.

[64] Robert Lucky. Are engineers designing their robotic replacements? *IEEE spectrum*, page 27, 2016.
(Easton Jensen).

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(Nicole Trenholm).

[66] Farhad Manjoo. Making camers eerily smart. *New York Times*, pages PB1–B4, February 2018.
(Maddy Weaver).

[67] Johm Markoff and Paul Mozur. Program knows just how you feel. *New York Times*, pages pD1–D2, August 2015.
(Maddy Weaver).

[68] John Markoff. How many computers to identify a cat? 16,000. *New York Times*, page P1, June 2012.
(Maddy Weaver).

[69] John Markoff. A learning advance in artificial intelligence rivals human abilities. *New York Times*, pages b3–b3, december 2015.
(Nicole Trenholm).

[70] Jane Mayer. Rules of play. *New Yorker*, pages 14–15, July 2018.
(Lydia Sanchez).

[71] Luis J Mena. Mobile personal health monitoring for automated classification of electrocardiogram signals in elderly. *Computational & Mathematical Methods in Medicine*, pages 1–9, May 2018.
(Marcellus Parks).

[72] Cade Metz. This a.i. can build a.i. itself. *New York Times*, pages 00–00, November 2017.
(Bram Dedrick).

[73] Cade Metz. Google researchers say they're learing how machines learn. *New York Times*, pages 00–00, March 2018.
(Bram Dedrick).

[74] Christopher Mims. Why ads are the best thing to happen to the internet. *Wall Street Journal*, pages B1–B4, July 2015.
(Lydia Sanchez).

[75] Christopher Mims. Should artificial intelligence copy the human brain? *Wall Street Journal*, pages 00–00, August 2018.
(Bram Dedrick).

[76] Kakuko Miyata, Hitoshi Yamamoto, and Yuki Ogawa. What affects the spiral of silence and the hard core on twitter? an analysis of the nuclear power issue in japan. *American Behavioral Scientist*, pages 1129–1141, JAug 2015.
(Sheldon Branch) This article discusses the social impact of Twitter on public opinion.

[77] Don Monroe. Chips for artificial intelligence: companies are racing to developing hardware that more directly empowers deep learning. *Communications of the ACM*, pages 15–17, April 2018.
(Rodrigo Martinez) Companies are trying to develop new technology hardware for AI that is efficient enough. These companies are taking different approaches in order to achieve their goal. Some companies are working together to reach their goals.

[78] Michael Morisy. How paypal boasts sercurity with artifical intelligent. *Technology review*, pages 73–74, march/april 2016.
(Lydia Sanchez).

[79] Siddhartha Mukherjee. The algorithm will see you now. *New Yorker*, pages 46–53, Apr 2017.
(Sheldon Branch) The article explores the potential for algorithms and learning machines in medical diagnosis and diagnostic techniques.

[80] Sidhartha Mukherjee. The algorithm will see you now. *New Yorker*, pages 46–53, April 2017.
(Bram Dedrick).

[81] Jurriath-Azmathi Mumith. Design and optimization of a thermoacoustic heat engine using reinforcement learning. *International Journal of Low Carbon Technologies*, pages 431–439, September 2016.
(Tony Ferenzi) A thermoacoustic heat engine is a very unique and desirable engine as it is simple and efficient. It is useful in that it can power things like refrigerators and in general can produce electtricity for any form of machine. The engine is actually being created using a type of machine learning technique called reinforcement learning. This type of learning rules out flaws and improves upon working parts to maximize energy output. Reinforcement learning is simple in that it specifies whether something is good or bad amd then rewards it for the good.

[82] N/A. For the military,AI and 3-D might make for easier maintenance: Army uses machine learning to monitor bradley fighting vehicles; marines quickly fix aircraft. *ISE: Industrial & Systems Engineering at Work*, page 17, Aug 2018.
(Austin Stala) This article discusses applications AI and machine learning by the military. One of the main applications by the military is to monitor vehicles and help with maintenance.

[83] Brian Nadel. AI accelerates: Machine learning will offer teachers deeper insight, but not replace them. *District Administration*, pages 55–58, 2018.
(Koichi Okazaki).

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(Rodrigo Martinez) People are implementing machine learning to various things such as the medical field. People are now using machine learning to create self teaching AIs to play games. An example is a former Microsoft engineer named, Seth Hendrickson created a self teaching AI and made it play through a level in a Mario game.

[85] Neville Neil. The chess player who couldn't pass the salt. *Communications of the ACM*, pages 24–25, 2017.
(Koichi Okazaki).

[86] Floyd Norris. Inside the workings of a money machine. *New York Times*, pages pC1–C3, October 2003.
(Maddy Weaver).

[87] Yuji Nozaki. Predictive modeling for odor character of a chemical using machine learning combined with natrual language processing. *PLoS ONE*, pages 1–13, June 2018.
(Yuan Hong) Technology are doing successful performances in different tasks. Now it utilizes mass spectra data which performed by human language. The sensory includes smell and taste. However, a large scale of sensory is not able to complete or perform. But the experienment shows

us how amazing this technology could analyze. This the first one to perform something like that.

[88] ole marius hoel rindal, trinem seeberg, johannes tjonnas, pal haugnes, and oyvind sandbakk. Automatic classifcation of sub-teckniques in classical cross country skiing using a machine learning algorithm on micro-sensor data. *sensors*, pages 1–15, january 2018.
(Lydia Sanchez).

[89] Sung Kyun Park. Construction of environmental risk score beyond standard linear models using machine learning methods: application to metal mixtures, oxidative stress and cardiovascular disease in nhanes. *Environmental Health: A Global Access Science Source*, pages 1–15, September 2017.
(Tony Ferenzi) Pollution has always been a huge problem over the past couple of years. Though steps have been taken to research and counter pollution health effects, not much is known about what health problems can be caused by multiple pollutants mixed together in an area. Researchers came up with a system known as ERS to predict and monitor these specific pollutants, along with the health problems that come with them. Machine learning was critical in bypassing certain problems and quickly producing predictions. Different methods of machine learning were also used to make specific predictions about certain elements.

[90] Roberto Pieraccini. The voice in the machine: Building computers that understand speech. *The MIT Press*, 2012.
(Nicole Trenholm).

[91] Chris Preimesberger. why AI machine learning will become mainstream in 2017. *eweek*, page 1, December 2016.
(Lydia Sanchez).

[92] Madhavi Ramani. Art(ificial intelligence). *Wilson Quarterly*, pages 00–00, 2018.
(Easton Jensen).

[93] E. Madhusudhana Reddy. Able machine learning method for classifying disease. *International Journal of Recent research aspects*, pages 223–226, March 2018.
(Yuan Hong) Machine learning are almost at any field of research, the time passed on and it is more likely to become a medical tool. People could use this to preserve a better medical care, no matter men or children. Research shows that this method is getting more reliable and becoming a potential value in the future.

[94] E. Madhusudhana Reddy and P. Bhaskar. Able machine learning method for classifying disease-treatment semantic relations from bio-medical sentences. *International Journal of Recent Research Aspects*, pages 223–226,

Mar 2018.
(Austin Stala) This article discusses how AI and machine learning can be used in medical field. One of the ways mentioned in the article is how it Can help in selecting treatment faster and more accurately. The article also states that AI with machine learning can help human doctors researching treatments and diseases.

[95] Matt Retnolds. Neural net learns words like a child. *New Scientist*, pages 12–12, November 2017.
(Tiff Serra-Pichardo).

[96] Matt Reynolds. Face ID tech can see through your disguise. *New Scientist*, page 7, September 2017.
(Jakob Orel).

[97] Adee sally. Beware tweets that lure clicks to steal info. *New Scientist*, page 21, August 2016.
(William Golden) Twitter holds a machine learning system that aids in phishing schemes.

[98] David Scheider. Deeper and cheaper machine learing. *IEEE Spectrum*, pages 43–44, January 2017.
(Bram Dedrick).

[99] David Schneider. Deeper and cheaper machine learning. *IEEE spectrum*, pages 42–43, 2017.
(Easton Jensen).

[100] David Schnieder. Deeper and cheaper machine learning. *IEEE spectrum*, pages 42–43, January 2017.
(Rodrigo Martinez) As technology advances we want to take efficient steps. Companies such as Nvidia, Intel, Microsoft and Google are finding ways to approach this. Nvidia has done this by shifting from their Maxwell Architecture chips to a Pascal Architecture.

[101] Nate Seltenrich. Singapore success. *Environmental Health Perspectives*, page 167, September 2016.
(Tony Ferenzi).

[102] Nathan Sinnott. How machine learning is changing the world and your everyday life. *Entrepreneur*, page N/A, April 2018.
(Rodrigo Martinez) Machine learning has evolved along society and is helping society grow and improve. This affects the education, labor work, law, health, and transport environments.

[103] James Somer'. Is ai riding a one-trick pony? *MIT Technology Review*, pages 28–36, November/December 2017.
(Tiff Serra-Pichardo).

[104] James Somers. Is AI riding a one-trick pony. *Technology Review*, pages 28–36, Nov/Dec 2017.
(Austin Stala) This article talks about the limitations of machine learning. The central point of the article is how the main concepts behind machine learning are over 30 years old and are reaching their limitations.

[105] Kaan Koseler; Matthew Stephan. Machine learning applications in baseball: a systematic literature review. *Taylor & Francis*, pages 745–763, 2018.
(Easton Jensen).

[106] Hakon Hapnes Strand. How plentiful are machine learning jobs in 2018? *Forbes*, page N/A, April 2018.
(Rodrigo Martinez) Machine Learning has driven the tech industry to a whole new level. This brings a whole new world of job opportunities. We take a look on how countries are doing with machine learning jobs. One example is the United States in which is the biggest machine learning countries having places such as Silicon Valley.

[107] Revell timothy. Play it for real. *New Scientist*, page 24, October 2016.
(William Golden) Scientists use the realistic driving simulation of GTA V to teach self-driving cars.

[108] unknown. Slef-driving cars—an ethical perspective. *Penn Bioethics Journal*, pages 8–8, 2015.
(Koichi Okazaki) Recently, many major companies such as Google, Benz, General Motors, and Toyota are developing the technology of self-driving cars and it is becoming capable for the practical use. One of the most beneficial point of self-driving cars is that reduces the car accident dramatically. However, one ethical issue came up, if the accident occurred and if it was unavoidable to hit someone the program might have to choose the victims, in order to save others. Thus, this is considered as a crucial issue since where the responsibility goes isnt clear, is it the car, producer, or consumer?

[109] Mikhail Urbazarv. Estimation of forest aboveground biomass and uncertainties by integration of field measurements, airborne lidar, and sar and optical satellite data in mexico. *Carbon Balance & Management*, pages 1–20, February 2018.
(Tony Ferenzi).

[110] Moshe Y. Vardi. Artificial intelligence past and future. *ACM*, page 5, 2012.
(Easton Jensen).

[111] Jaikumar Vijayan. Google for jobs employs machine learning to help people find work. *eWeek*, page 1, May 2017.
(Rodrigo Martinez) Google decides to use machine learning to help people

find Jobs in a much more efficient manner. People will be able to search for jobs in their area in which matches their criteria. With this people may have a better chance getting a job opportunity.

[112] Athanasios Voulodimos, Nikolaos Doulamis, George Bebis, and Tania Stathaki. Recent developments in deep learning for engineering applications. *Computational Intelligence & Neuroscience*, pages 1–2, 2018. (Koichi Okazaki).

[113] John Wallace. All-optical neurak network can be 100 times faster than electronic versions. *Laser Focus World*, pages 8–13, November 2017. (Tiff Serra-Pichardo).

[114] Chelsea Whyte. I teach machines to hunt down cancer. *New scientist*, pages 42–43, 2018. (Easton Jensen).

[115] Chelsea Whyte. I teach machines to hunt down cancer. *New Scientist*, pages 42–43, 2018. (Koichi Okazaki).

[116] Jeffrey A. Wilke. Battle of the brains. *Economist*, pages 61–63, December 2017. (Jakob Orel).

[117] Alec Wilkinson. Mask crusader. *New Yorker*, pages 22–23, July 2013. (Lydia Sanchez).

[118] Wun-ae Kim. Knowledge-based didagnosis and prediction using big data and deep learning in precision medicine. *Investigative & Clinical Urology*, pages 69–71, 2018. (Koichi Okazaki).

[119] M Yoon. New reinforcement learning algorithm for robot soccer. *Orion*, pages 1–20, February 2017.
(Tony Ferenzi) Reinforcement learning can be used in many different ways, including in robot soccer. A specific type of reinforcement learning is being used called Temporal-Difference value iteration algorithm with state-value functions, This algorithm helped with quick decision-making for the robots in play during the game. An Artificial Neural Network is once again used to improve choices called the Multi-Layer Perceptron. In the end, the reinforcement learning proved effective in various tests involving shooting a soccer ball into a goal.

[120] Naihui Zhou. Crowdsourcing image analysis for plant phenomics to generate ground truth data for machine learning. *PLoS Comutational Biology*, pages 1–16, July 2018. (Marcellus Parks).