Where Technology is Taking Us

As I consider the future that awaits our species, I find the possibilities both exciting and unnerving. We are in the midst of a technological revolution whose scale and speed are unprecedented.

Automated solutions to real-world problems are being developed at a rapid pace, and it seems inevitable that countless jobs will evaporate. But I think this seeming peril is actually a great opportunity. While humanity has faced these paradigm shifts before, we now have the historical perspective to plan accordingly.

If we continue on our current trajectory, humanity is bound to repeat a process best seen in the Industrial Revolution of the 19th century. Until that time, textile manufacture was the work of highly-skilled artisans.

These laborers were well-paid and respected, but when new machines arose to automate their work, movements like the Luddites sprung up to fight back. These displaced laborers actually destroyed machinery, even battling the British Army in Lancashire.

Of course, these anti-technologists failed, but their plight is relatable. Faced with obsolescence, we humans have a knack for panic. But we also adapt. While textile workers lost their jobs, new jobs came about. The service sector boomed as manufacturing became automated, and people learned new skills to serve the market.

Instead of wallowing in the discomfort of these changes, humanity adjusted and moved on. Viewing this process as an objective observer, famed English economist John Maynard Keynes predicted a world of leisure in his 1930 book Economic Possibilities for our Grandchildren.

While his proposed fifteen hour work week has not yet materialized, it is evident that our species’ tireless innovation is leading to a new frontier. As technology subsumes more and more of our daily obligations, we will be freer to pursue our passions. Humanity will be free of the tedium of “survival,” instead being able to think up even more creative solutions to build the future.

Although this future of near-perfect, universal automation seems far away, we need to begin planning today. The questions of basic income and emotional fulfillment in a job-less world may seem like folly, but, by considering these concepts, we elevate our society. The most forward-thinking civilizations are the ones that stand the test of time, and with our modern world, adaptability is more important than ever.

-Daniel Holloway, CE Junior
On November 17, IEEE hosted its first crash course in digital logic (EEL3701C). The material was presented by Daniel Jensen, a seasoned student and TA for upper level ECE courses for which digital logic is a prerequisite for.

This speed review was geared towards students who are planning to take the course in the near future, or those who find ECE interesting and just want to learn more about the courses that the major houses. Those who have taken digital logic know just how fast pace the class is and how easy it is to get left behind. This crash course demystified what topics will be presented in digital logic and went over the basics of each topic.

The beginning of the actual UF course focuses on concepts found in discrete mathematics such as basic logic operations and boolean algebra. The crash course presented these topics with expectations that you know nothing, and built upon itself to present more complex material in a simplified way.

Jensen started off by explaining binary. He then explained how to turn a decimal number into binary, a binary number into hexadecimal, and any number into whatever base. With this basic knowledge explained and understood, logic operations could be explained, which led to the explanation of IC chips, which led to how to wire logic equations into a circuit using IC chips, to what a multiplexer is, and so on.

Digital logic is a gateway course to all other courses in ECE and is considered one of the harder courses in terms of time commitment. Getting a head start in it is highly recommended to lighten any difficult expectations one has of it.

IEEE hopes to host more crash courses in the future depending on student demand and student reception of present crash courses. If you would like to see more crash courses like our digital logic crash course, don’t hesitate to voice your opinion in person to an IEEE officer or to our Facebook page.

-Emily Macon, CE Junior

‘Tis the Season

It’s that time of year again: religiously-veiled commercialism, holiday songs plaguing the radio (does anyone listen to the radio anymore?), and temperatures ranging from 40-80°. Although it is technically still autumn until December 21st, winter garb, gift ideas, and potential savings are being thrown at us before Thanksgiving dinner is even finished.

This year seems to mark the year of the holiday-lights-projector, a nifty decoration I’ll admit. I still remember when having the light up moving deer in your front yard was the hot new trend.

Have we heard about the 3D printing pen? It is an exciting advancement in technology for your artistic, nerdy friend. This Thanksgiving, I am thankful for people who give me gift ideas so I don’t have to pretend I know them well enough to get them a personalized present.

Perhaps, this year, you can denounce the “gift buying and

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“giving,” and instead use that money to spend time with your family. Give experiences instead of objects. Take a camping trip, or visit New York. Whatever you do, don’t watch Rudolph. Do watch A Christmas Story; that never gets old, despite being aired for twenty-four straight hours on TBS.

On a serious note, the winter (even a Florida winter) can be harsh on the homeless. Even if we don’t have the money to donate to all the cowbell adorned charities, we can help by making small bags filled with useful items such as socks, granola/energy bars, peanut butter crackers, a tooth brush and travel sized tooth paste, feminine supplies, ChapStick, Tylenol, and/or deodorant. Even if you only make one, it can make a big difference to someone else.

Regardless of what you do this holiday season, or who you spend it with, be safe, have fun, and be sure to drink your Ovaltine.

-Allyson Jones, EE Junior

Games for the Engineering Student

Videogames. As it turns out, they aren’t just for caffeine addled teenagers. According to a study by the Entertainment Software Association, the average age the modern gamer is around 35 years old. Over 74% of gamers are over the age of 18. Despite the popularity of games (or more likely, because of it), they have been often mocked as ‘brainless’ or a waste of time. Though those very same people will gladly binge Orange is the New Black on Netflix.

I’m here to demonstrate some games that contradict popular opinion, whose mechanics inspire thought. Engineering, and its sister majors in the sciences, require a unique amount of patience and problem solving that specific games help develop. Even analyzing the design decisions made by these games is an excellent way to learn how professional game designers solve problems that come up when developing a project.

**Resource Management - Minecraft**

I’m sure anyone with even a small history playing games saw this one coming from a mile away. For the handful of you who haven’t heard of Minecraft, this indie titan might just be one of the most popular games in the world right now, despite being virtually the opposite of titles like Call of Duty or Battlefield.

The goal of Minecraft is simple: use the world around to survive and hopefully thrive. In order to survive the game’s harrowing nights of zombies and skeletons, players are forced to use their time and surrounding resources in order to create a shelter. As the player becomes more and more accustomed to the game’s mechanics, they can begin taking risks by going into mines or dungeons for extremely valuable resources.

How is Minecraft relevant to engineering? Well, not in the way you’d expect. Considering the game’s slightly absurd physics system, structural engineers aren’t going to learn sound construction.

No, what Minecraft teaches is resource management, of both time and capital. Often, engineering the ‘best’ product isn’t the best solution. Utilizing cheaper (but still safe) materials is sometimes required to make a contract even viable. Efficiency in using what’s readily available is a skill Minecraft certainly develops in the player.
Creative Solutions - Portal

Portal, while certainly not as a huge hit as Minecraft, has made its own splash in the gaming world. This simultaneously charming and cynical game has you play the role of a test subject in the extremely advanced Aperture Laboratories, run by the maniacal AI GLaDoS.

The only real tool you have to complete your tests is the game’s titular Portal Gun, allowing you to place two connected portals anywhere in the room. The brilliance of the game is that this is its only mechanic, you are entirely limited to your gun and your wits.

Where Minecraft develops the player’s resource management skills, Portal rewards creative solutions to problems. The game is the very definition of ‘thinking outside of the box’; many of Portal’s most complicated puzzles can be solved with a handful of key portal placements.

This kind of creative thinking is core to problem solving in the real world; where situation can’t always be solved with the same hackneyed equation.

Problem Solving and Patience - Dark Souls

Dark Souls, also known as the “smash your face into a boss until you smash your controller into your TV” simulator. I kid, but Dark Souls isn’t a game to be taken lightly. Its “you WILL die” mentality is famous. So how is this fantasy action-rpg relevant for an up and coming engineer?

Dark Souls teaches something our other examples haven’t: dealing with failure. Okay, I know failure isn’t something exclusive to engineering or anything, but dealing with failure is pretty essential to every profession.

You may think “I already know how to handle failure dude.” But Dark Souls doesn’t just improve your patience, it encourages you to figure out why you failed. It constantly reinforces the idea that you could be doing a little bit better.

The game is hard, but not unfair. Maybe you didn’t dodge at the right time, or you mismanaged your healing flasks. The game never kills you for a reason beyond your control.

To put my rambling more succinctly: you learn not only to deal with your screw ups, but also how to realize what you did wrong and (more importantly) what to do right.

Games are a unique form of art. They allow the player to learn through experience, not observation. These skills help in ways that are subtle, but substantial. Just don’t let them replace the real deal.


-Tyler Gersbach, Mathematics of Science Senior