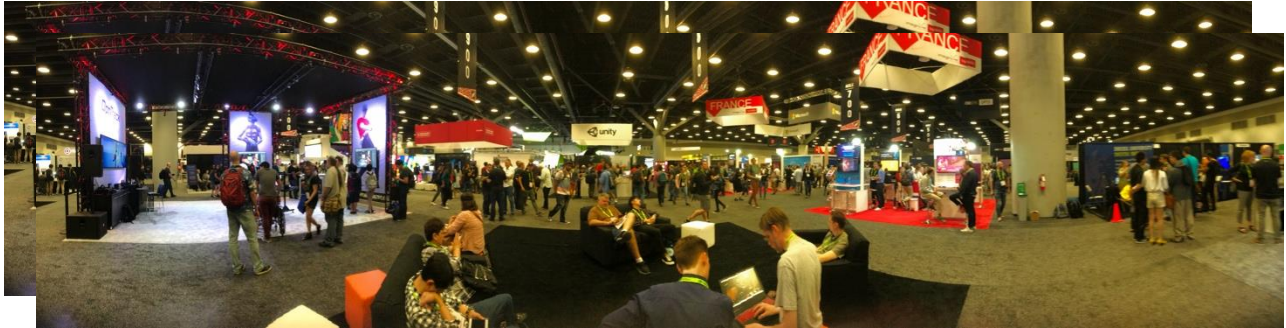# SIGGRAPH 2018

A Thousand Different Futures For Students

This summer, from August 12 -16th I had the opportunity to attend Siggraph 2018, one of the largest computer graphics conferences in the world. I decided to write this article to pass on a little bit of the information I gained, and the experiences I had.

First, I would like to thank my school division, the River-East Transcona school division and the River-East Transcona Teachers Association for funding and administering the professional development fund that paid my conference fees and travel, and my son, who provided me with a 'home base'.

Here are some of my 'big takes' on the overall conference.

Generations

The theme of the conferences was "Generations" which created a focus on the history of the Special Interest Group Graphics, the academic/industry society which runs the conference. Under this theme, a technological history museum of Virtual Reality and a gallery of historical Concept Art were part of the displays, but so were current Animated Short Films and a collection of current VR experiences.

In addition, the Educational stream of the Conference focused on how industry has supported and can continue to support research and training in what has become a huge creative industry.
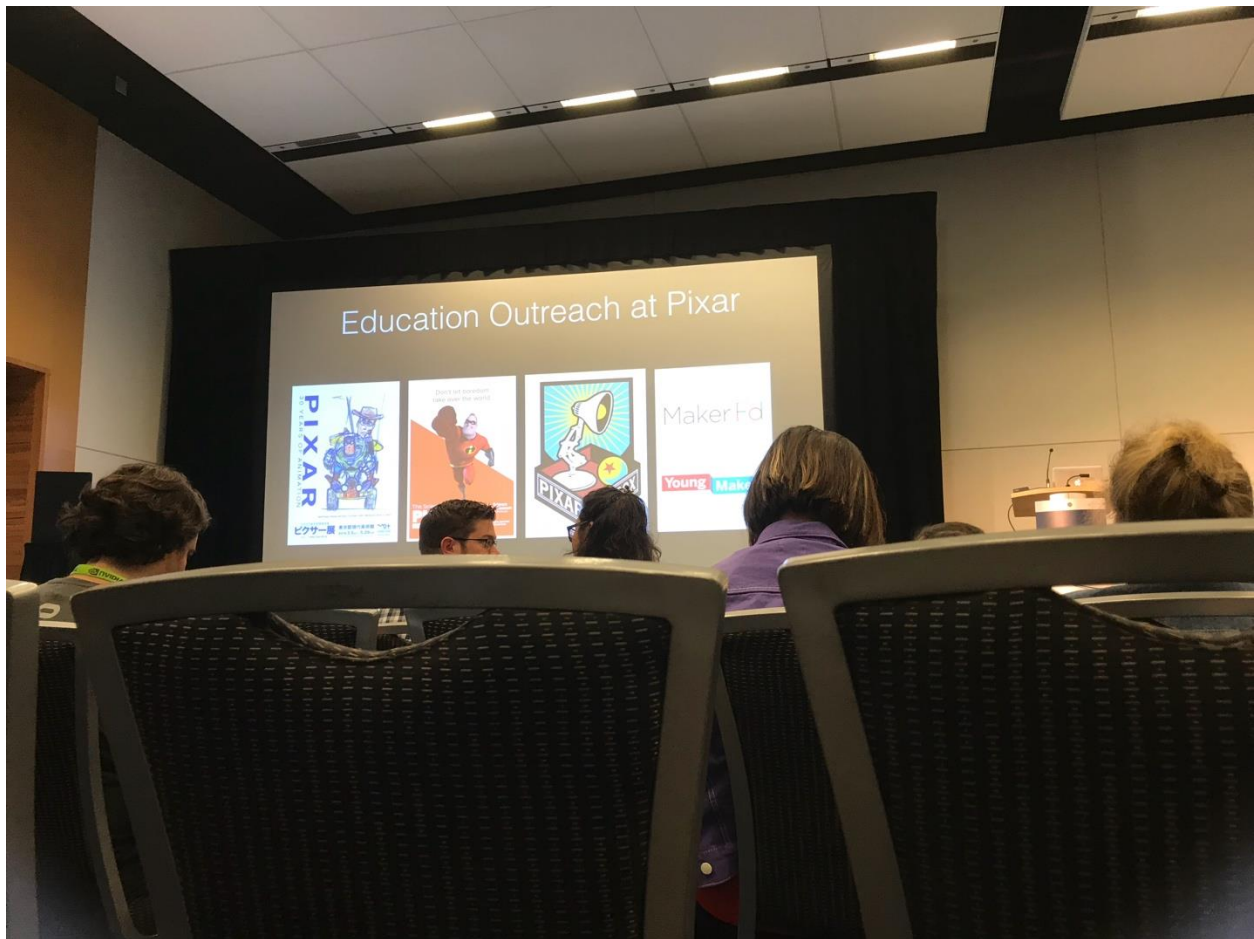
This idea of education and industry becoming more mutually supportive and connected, encompassed not only post-secondary education, but high school and elementary education. Pixar continues to build on their Pixar in a Box, educational series on the Khan Academy website, free for educators and students. Several post secondary institutions were outlining programs to help public school educators include real industry training into ELA, Math, Science as well as Digital Media courses. Many film and game studios were showcasing formal on the job training/apprenticeship style programs for acquiring talent. More and more software companies are offering free or low cost software, and a central Academy to promote the creation and sharing of open source software has been created.

As an educator, it was gratifying to see how supportive the industry is to education at all levels. We will be expanding our library of software, and our use of industry sources for training as our program grows.

Technological Convergence and Real Time Production

Unity3D was a major player at the conference, especially the use of the 'simulation engine' in Autonomous Vehicle development, Automotive Design, and in particular the development of methods for 'Realtime Animation Production'. I witnessed a co-operative effort between director, and Unity3D to redo the Story, Layout (Camera), Animation, Materials, and Post FX of an animation beat in about ½ hour, within Unity3D. I also witnessed high-end and low cost motion capture systems used to provide comparable real time animation takes from Unity3D, and real time facial expression captured from an iPhone.

Unity3D was everywhere, whether the topic was related to Film, Games, Virtual and Augmented Reality, AI, Architecture or Engineering.

I am so glad I started including Unity3D in my courses back in Version 3 days. We are now building 2D, 3D, and VR scenes and will expand into AR and AI as student interests dictate.

AI for Creativity

Almost every software supplier I connected with was working on or already shipping, software that included Artificial Intelligence to assist the creative process. The example I had the deepest look at was presented by Allegorithmic, the creators of the Substance library of material creation tools. They presented an experimental tool, Substance Alchemist, now in open beta.

Alchemist is a material design package, much like Substance Designer, with the option to develop alternates to materials based on color palettes created by drag and dropping in jpeg image files. For example, if you developed a leather texture, dragging and dropping a desert image would allow rapid creation of alternate color schemes pulled from the jpeg. It was a very cool way of applying a consistent color palette to project materials.

VR/AR is not Dead

There was a huge VR component to the conference, and lots of support from big studios like Pixar who presented a look at Coco VR, a new project based on the hit movie, but also a lot of really creative work by studios like Baobab, who presented Crow – the Legend, and an Immersive Pavilion which hosted a multiplayer AR work from Niantic, the makers of Pokemon, and Harry Potter, and Owlchemy labs, presenting Vacation Simulator. I was happy to provide a Winnipeg congrats to Devin Reimer and Graeme Borland who presented on the neat interactive water system they created for their upcoming release.

I was particularly impressed with the quality of Artistic Expression in a many AR/VR projects, and the exploration of themes connected to Empathy and Alienation which as so suitable to presentation in VR, and the emerging tools for Design within VR space.

It maybe that currently, we have reached a plateau, where mass market VR is not a reality, but clearly industry giants believe it's coming and are leading the way.

The Job Fair

The conference hosts a formal Job Fair that runs for 3 days, and tons of opportunities to network under less formal conditions. There were at least 20 companies in the fair itself, and lots of informal job discussions everywhere I went.

The entire conference reinforced to me, how there are a countless different paths to success for students who are passionate and creative people, who love to learn, and I see my role as an early guide, a pointer to the entrance onto these pathways.

Summary

There were a hundred presentations I wish I could have attended, and I look forward to watching some of them as they are released on line. Some major studio presentations were not recorded, and media recording was banned, so that was disappointing, but the presentations themselves were outstanding. The highlight of the whole conference was watching the heads of Pixar's various departments, Story, Layout, Design, Animation, Simulation, and Rendering talk about how they worked on developing better collaboration as they pressed to solve a thousand problems and release Incredibles 2 a full year ahead of their original schedule.

I returned with copies of publicly release presentations and links to online collections. If you are interested email me at jthomson@retsd.mb.ca, and I can share materials and links.

After the conference ended, I had the opportunity to take my granddaughters, aged 12 and 7 to see Science of Pixar, a traveling interactive exhibition of Pixar's working process, which happily was on display at Vancouver's Science world. It was their second visit to the exhibit, but they

were still delighted to explore the process for creating the films, and how Math, Science and Art come together in the process. It was a great end to a fantastic week.

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