



## Open Lab Hours: Summary 05-02-2016 With Nico Reski & Romain Herval



This first *Open Lab Hours* session in the Department of Media Technology at Linnaeus University was a great success. We would first like to thank everyone who stopped by and joined us to talk about media technology-related topics. Each week we will publish a short summary about what was discussed and done during the Open Lab Hours. Within this first session, we had the pleasure to help students with different backgrounds in different domains. We appreciated to be joined by bachelor and master program students of the Department of Media Technology as well as by staff members, presenting their recent projects and developments.

Nico engaged in discussions about the 3D touch technology<sup>1</sup> embedded in the recent genera-



tion of Apple iOS devices. The talk went around 3D touch on devices and how the technology could potentially be utilized within the area of mobile gaming. The new Apple mobile devices offer a third level of touch, which is different from pressure level found in graphical tablets for example. The discussion evolved quickly on how to construct a user interaction study investigating the user's ability to use the 3D touch technology, controlling different pressure levels. Could the third level of touch offer new and exciting types of interaction mechanics in the context of mobile gaming and thus enrich the user experience?



An answer should be available by the end of the semester.

Later on we were introduced to a smart-pen for notes taking. The Bamboo Spark<sup>2</sup> from Wacom allows to take notes on paper and save what you were writing digitally. A great way to take notes and draw diagrams for the one who does not want to spend the full day in front of a computer or does not own a tablet, but still archive the physical notes digitally. The pen has 1024 pressure levels. A discussion arose around

<sup>1</sup><http://www.apple.com/iphone-6s/3d-touch/>

<sup>2</sup><https://www.wacom.com/de-de/products/mobile-accessories/bamboo-spark>



the difference between 3D touch, pressure levels and what would be the most efficient depending on the context.

Meanwhile, another discussion about Augmented Reality (AR) using Unity3D started with Romain. First year master program students are currently exploring the application of Augmented Reality as part of the course “Cross-Media Design and Production”. Unity offers some nice features for 3D design and plugins are developed to enhance the capability of this software. Vuforia<sup>3</sup> is one of these plugins that allows Unity to create an Augmented Reality scene. We talked extensively about markers and how some can be more efficient than others and why. The right choice of markers can be critical for Augmented Reality. It is then important to understand how it works. During the Open Lab Hours we explored the capabilities of adding different 3D models to an AR app built with Unity3D and Vuforia. Both testing simple shapes and more complex 3D models, we investigated if any performance drawbacks, such as lag or framerate drop downs, would occur<sup>4</sup>. We also examined ENTiTi<sup>5</sup>, a software tool from WakingApp that allows the creation of Augmented Reality scenes without any line of code (“visual scripting”). There exist various solutions of how to create Augmented Reality scenes and this area of interest will be more and more explored with the arrival of major actors such as Microsoft and its HoloLens.

<sup>3</sup><https://developer.vuforia.com>

<sup>4</sup>None occurred.

<sup>5</sup><http://www.wakingapp.com>



The discussion continued and proceeded towards image and 3D markers for Augmented Reality. Since a few years, Lego uses Augmented Reality for its boxes, providing an exciting way to get a better impression of the constructed Lego model to the customer. From there we explored the usage of Lego construction as a 3D markers. We may explore that matter in more detail next Friday.

Finally, we jumped from Augmented to Virtual Reality. The Department of Media Technology owns an Oculus Rift head-mounted display (HMD) device and it was used several times already for some projects, e.g. as part of a recent master thesis investigating the exploration of a 3D network created with open data from the web in an immersive VR environment. This time, it is David Johansson who is currently creating an impressive 3D environment representing a new concept of a house. He used the Unreal Engine 4 to create this environment using Blueprints Visual Scripting<sup>6</sup>. Blueprint Visual Scripting is a concept used in the Unreal Engine editor to create interactions within the 3D environment using blocks instead of writing code. This concept becomes more and more common and efficient, which is a good opportunity for non programmers to be able to create interactions within the 3D environments they design.

We hope you got an impression of last week’s activities. As we covered different topics and had meaningful and productive

<sup>6</sup><https://docs.unrealengine.com/latest/INT/Engine/Blueprints/>

discussions, we look forward to continue doing so during the next Open Lab Hours session on Friday, 12.02.2016. Feel free to stop by and drop in at the Interaction Lab in room D2270A between 9:00 and 12:00.

All creatures welcome.

For more information, please head over to [bit.ly/OpenLabHoursLNU](http://bit.ly/OpenLabHoursLNU).

