

# Network Institute Tech Labs

## Newsletter Fall 2013

### Introduction

The new academic year has started and after a normal quiet summer the Tech Labs are gearing up for new research and new possibilities. This newsletter gives you an update on projects, equipment and more.

### Visitors

#### **Claire Nee, Portsmouth University**

In October dr Claire Nee of the Portsmouth University (International Centre for Research in Forensic Psychology) paid a visit to the Game Cella' Tech Lab. She was visiting the NSCR (the Dutch NWO Criminology institute) to talk about her research using virtual reality environments to study burglars. The NSCR, Claire Nee and the Tech Labs will collaborate in a project that has recently been funded to create a virtual environment to study burglars habits, decisions and behavior during a burglary.

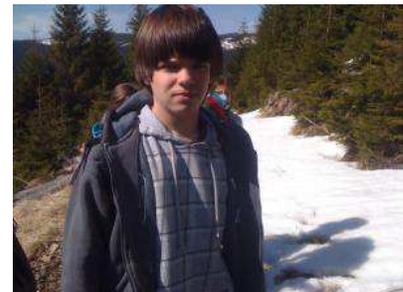


#### **Frank Nack Uva**

Frank Nack, a member of the Education Group at the Informatics Institute of the University of Amsterdam, visited the Tech Labs to exchange information about how the UvA and VU operate their Tech Labs. Both universities have comparable laboratories that offer researchers and students the possibility to use technology to do research. The meeting was also a starting point for the future labs in the new building of the AFS where labs from both universities will be clustered to create a truly unique group of technical labs.

#### **Rares Buhai**

On November 7<sup>th</sup> Rares Buhai visited the Tech Labs. He's the Romanian student who won the VU programming contest on how to navigate Amsterdam. As part of his rewards he got to spend a full week in Amsterdam with a grand tour of the university including the Tech Labs.



### Research

#### **Virtual Burglary – Game Cella'**

In the coming months the Tech Labs (Marco Otte), will participate in an international project about the behavior of burglars. The idea is to study how burglars go about their “job” using a high-end virtual environment. In this VR we will build several houses that will be fully stocked with everything your commonly find in a house. Furniture, clothes, valuables, etc. The participant will be able to walk along a short street and pick one of the houses that have been created. They can then choose how they want to enter the building and can start searching and picking up items they think are interesting and valuable.

Previous research done by dr. Claire Nee (University of Portsmouth) has shown there is a significant difference between professional burglars and non-burglars in how they search a house, which items they select and how much time they spent doing all this.

This new project will attempt to increase the realism of the VR and will try to add additional features, such as sound that might spook a burglar to abort this attempt. We will also look into using head-mounted-displays

such as the Oculus Rift to create an even higher level of immersion.



Researchers: Jean-Louis van Gelder, Claire Nee and Marco Otte

### FutureU – Game Cella'

Just before the summer research done at the Tech Labs was mentioned in the news and in the academic publication about that research. The research was the FutureU project, which was done in collaboration with the NSCR (Criminology institute). In short the theory states that people with criminal behavior tend to have little or no image of the future. By exposing them to their future-selves they would become more conscious about their own and other's futures and thereby show less criminal behavior. The experiment was conducted in the Game Cella' Tech Labs and used an immersive virtual room with a mirror in which participants would either see themselves at their current age or at some age in the future. The results were significant enough to prove there is a relation between criminal behavior and being conscious of the future.

The article on Kennislink.nl (Dutch): <http://www.kennislink.nl/publicaties/minder-crimineel-gedrag-dankzij-voorstellen-toekomstige-zelf>

And the publication: Gelder, J-L van, Hershfield, H.E. And Nordgren, L.F. (2013) Vividness of the Future Self Predicts Delinquency, Psychological Science, XX(X) 1-7, DOI: 10.1177/0956797612465197

### Travelling App – Game Cella'

The Tech Labs created an HTML5 web application that was integrated into a Qualtrics survey used by Julienka Mollee (CS) to research how people travel to their work, study and sport locations.

**Reizen naar: werk**

Aantal segmenten:  1  2  3  4  5  6  7  8

**Segment 1**

Aantal opties  1  2  3  4  5

Optie 1  Optie 2

**Segment 2**

Aantal opties  1  2  3  4  5

Optie 1  Optie 2  Optie 3  Optie 4

**Segment 3**

Aantal opties  1  2  3  4  5

Researcher: Julienka Mollee

Although Qualtrics does support many different types of input, the specific demands for this research were simply too complex. So the Tech Labs create an auto-adapting form that did the job. The integration with Qualtrics means that the participants won't really notice that they are actually using a web application outside of Qualtrics and the data is of course linked so analysis afterwards won't be a problem.

## Education

In September all first year student of the Lifestyle Informatics program paid a visit to the Game Cella' Tech Lab to learn about the Tech Labs, experience some of the technologies and invite them to make use of the Tech Labs. Several groups already used the Tech Labs for input on their assignments which they presented in the Intertain Lab.



## New equipment

At the end of the year we were able to make a few investments in new hardware and software that will extend the possibilities of the Tech Labs. Some of the equipment is simply to replace older computers so that the Tech Labs can facilitate any state-of-the-art high-end software using the latest processors and graphics cards. But there are a few special pieces that will create even more research opportunities.

In the Intertain Lab a large 4k television will be mounted, connected to a high-end computer to produce stunning 4x HD video. The Tech Labs will actually be one of the very first place in the Netherlands where this high-end Panasonic TV will be installed!

The difference in quality between standard HD and 4k HD is really something you will have to see for yourself. What could you use it for? Well, the extreme high resolution means a lot of detail in the images is visible so visualizations of complex information will be easier and better accessible on a 4k monitor. User experience will probably also be greatly affected by the high resolution and high contrast of 4k images. Of course the actual use of the monitor will be completely up to you!



For the Tech Labs in general we have also bought some additional VR equipment. Most of you will be familiar with the Oculus Rift head-mounted-display. A great example of how crowd-funded technology projects can accomplish things that the traditional industry hasn't been able to do for the past 5-10 years.

We will also add a static treadmill so you will be able to really walk around in virtual environment, even if they're much larger than the lab.

Furthermore we bought additional biosensors, tablets, wireless video and software for creating virtual environments and avatars.

If you would like to learn more about our new technologies, please do not hesitate to contact Marco Otte.

## The new building

Whether it will be called VU.nu or AFS.nu, the process of the new building of the AFS Informatics department has just passed an important milestone, the design of the building is now fixed. This means that the VU can apply for permits and publish a tender to hire a building company to actually start building.

The Tech Labs will have a significant presence in the building with over 800m<sup>2</sup> of space to house the current Network Institute Tech Labs and several technical labs currently housed at the Science Park of the UvA.

Starting on the first floor, we will create the brand new Iconic Lab. You could say this will be the Intertain Lab version 2. This new lab will have multiple functions. It will be available just as all the Tech Labs for research and education, but it will also serve as a showcase for state-of-the-art technology. Visitors can be shown demos of what the Tech Labs do, presentations can be given, etc. In collaboration with the new Learning and Library Center of the UBvU, we will aim for continuous updates, high accessibility and easy use of this new flagship of the Tech Labs.

The other Tech Labs, including the labs that will move from the Science Park to the new building, will be housed on the 7<sup>th</sup> floor of the building. All the Tech Labs will be clustered so they will be easy to find, support will always be close by, technologies can be shared between the labs, and much, much more.

In the coming year we will focus, together with the people of FCO, on how the available space will be constructed into our new Tech Labs.

