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Radboud Universiteit Nijmegen



Computer Science Summer Camp 26/08 - 01/09 2012 Venlo

If you like to:

- work on an interesting project
- work as part of a diverse and international team
- Experience the life inside Océ R&D
- have a lot of fun

free of charge!



**then ... join the summer camp at Océ at
the end of August!**



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Testimonies from last year

"It was a great experience for me and I'm very thankful for getting the possibility to participate. I learned very much and had a lot of fun. I have met many interesting and nice people during this week and enjoyed working on the assignment very much. Thanks again!"
J.O. – Cognitive Science Master Student

" It was a very good week and I would directly repeat it."
S.M. – Computer Science Master Student

"Thank you very much for the opportunity of attending this summer camp. It was really a great experience!"
K.E. – Information Science Master Student

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Proposed projects



**Pictures above are from the last summer camp.*



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1. A.R. Drone



Implement an application based on an OS API and the results of last year's summer camp to communicate with the A.R. Drone. A possible scenario could be defining waypoints that the drone should fly to, make photos (using the built-in camera), printing them and then fly back to the "base". To extend the range of the drone an android smartphone could be mounted on the drone and make use 3G instead of WIFI.

The experience from last year shows, that the students are able to implement quite complex application as face following based on the A.R. Drone. The Software "Building blocks for the A.R. Drone" which allows students to program some behavior for the drone in a graphical way could be taken as a starting point and can be redefined and extended.

2. Harvesting Data from Public Clouds



Information is currently available from multiple sources: social networks (e.g. Twitter, Facebook), newspaper websites, blogs, company news and so on. Coping with this variety and volume of information has become a time consuming task.

Last year, students combined tweets and a public database to compute the “hotness” of an artist. This year, the challenge is to combine multiple public data sources in order to create answers to every day issues: “what is the trendiest place this year?”, “can I plan a barbecue next weekend” etc.

Implement a web-based interface that allows for formulating specific interests in the form of stored queries that can be repeatedly executed. The application should return a number of entries that provide answers to these questions. Each possible answer should be rated based on the relevance and grouped based on the content.



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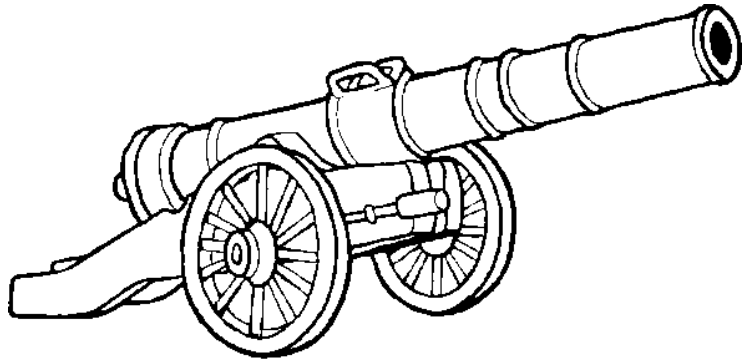
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3. Shooting with paper



At Océ a lot of work is put into fast but careful transport of paper through our printing machines. To do this, realtime software is controlling numerous motors, solenoids and sensors to lead a large quantity of paper simultaneously through the machine without causing paper jams.

The project is to live out your creativity with a piece of such a paperpath with motors and sensors. The paperpath will be connected to an Arduino microcontroller board. Use the motors to shoot paper on given targets, use sensors to measure the speed of the paper and try to adapt to different sheet sizes, coatings and weights. Can you shoot the paper precisely a given distance? Can you cut through a cucumber with it? Let's find out!



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4. Quantified Self



Monitoring ourselves is a hype trend that implies using sensors to gather daily activity related data. Using a wristband, physiological measurements, like galvanic skin response, and accelerometer data can be gathered to detect human activities and allows, e.g., estimating the stress level of people in the events that took place in their working day. What remained out of picture is contextual information about things outside someone's calendar that can have impact on the stress level like weather conditions (sunny or rainy), world news reports, TV programs, sport events, stock markets, etc. (in general, historic information that could be found on the Internet, but not only there).

The project challenge your imagination to include (uncommon?) information sources as well as information derived from multiple sources. Pre-measurement are provided. Align the chosen additional information with the rest of the data (sensor measurements, meetings and self-reports).



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5. Fancy data dependent web-interfaces



The iTask toolkit allows Task Oriented Programming, TOP, see <http://wiki.clean.cs.ru.nl/ITasks>. One of the features of TOP is that it able to generate a web-based interface automatically from high level task descriptions. It is very easy to make these task specifications data dependent and aware of the other workers and task in the system. This opens a new world of possibilities for interface design: it becomes feasible to adapt the interface dynamically to the actual situation.

In this project you can apply this to a subject of your choice. For example, provide the user interface for one of the other teams!

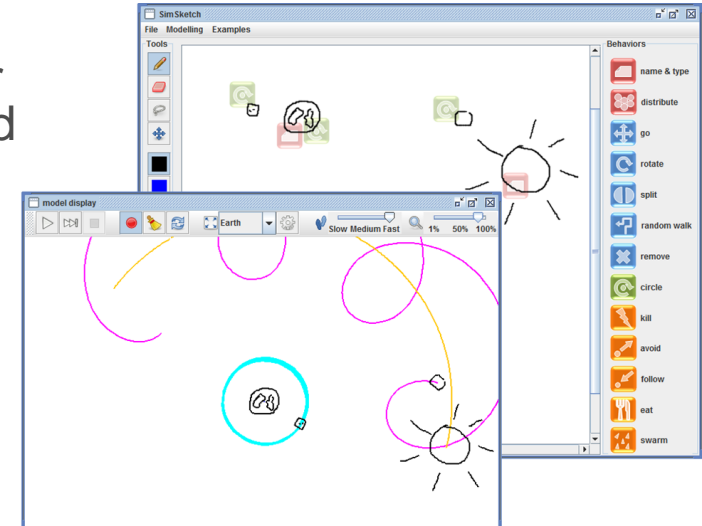


6. Modeling and drawing with Kinect

The Microsoft Kinect motion sensing input device has been designed as an input device for the Xbox 360 console only, but has been opened soon to developers by releasing a software development kit for Windows 7, which allows to write “Kinecting apps” in e.g. C# or Visual Basic .NET.

These developments made it appealing to utilize such kinds of innovative input devices for applications that have been designed with a touch-based or pen-based interface in mind.

The vision for this summer camp project is to design, specify and implement a gesture-based interface for SimSketch on the basis of an existing Java application, the Kinect hardware and available drivers and wrappers.





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<http://modeldrawing.eu/blog>

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