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Tobii test of Gazconic by Oleg Špakov

Gaze controlled ninja cursors

Tested in July 2010 by Måns Östberg

Ninja Cursors is a technique that uses several cursors on the same screen, and with Gazgonic the correct cursor is selected with eye gazes.

Gazconic has been developed by Oleg Špakov (<http://www.cs.uta.fi/~oleg/>) at the University of Tampere in Finland. Ninja Cursors is a concept by Masatomo Kobayashi and Takeo Igarashi (http://www-ui.is.s.u-tokyo.ac.jp/~kobayash/research/ninja_cursors.html).

Test details

Test performed 2010-07-06 on Gazconic ver 1.0, released on 2008-08-27. The test was performed on the following equipment:

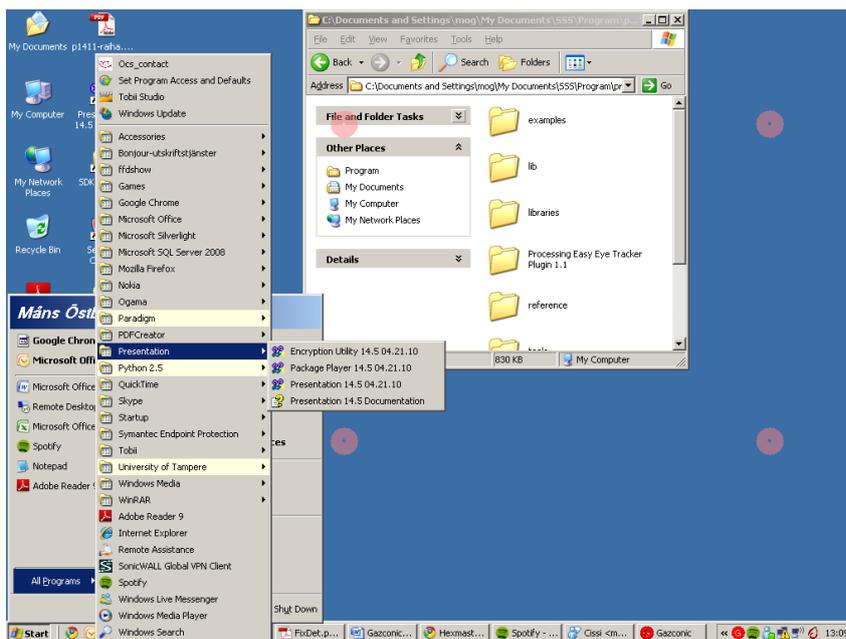
- Eyetracker: Tobii T60 XL, firmware 1.2.21 (should work on all Tobii eye trackers)
- Computer: FujitsuSiemens laptop LIFEBOOK BS034 (2 GB ram, 2 GHz Intel Core2 T7200 CPU at 2 GHz)
- Operating system: Windows XP service pack 3
- SDK: Requires ETU-driver by Oleg Špakov which is based on the Tobii SDK.

Test results

Works well! Caveats: The program didn't work on dual screens unless in clone mode. When exiting the experiment mode the cursors can behave strangely when you save the log-file.

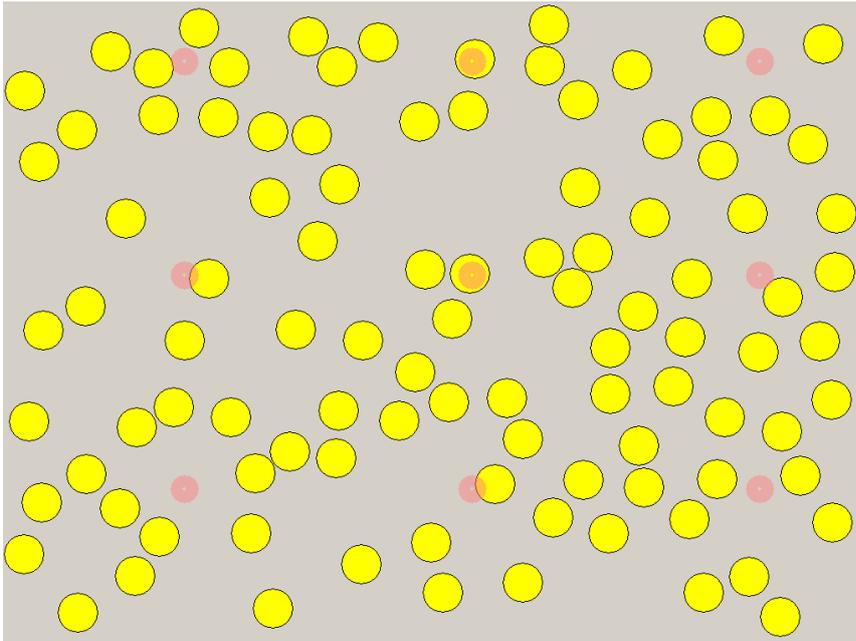
Overview

The program has two modes, normal and experiment. In normal mode you can try the Gaze controlled ninja cursors in the Windows GUI. You get a number of red circles on the screen that all move when you move the mouse. The mouse cursor will always be at the circle closest to the gaze. To get back to normal mode you press F11 or double click on the Gazconic cursor down by the clock.



Picture 1

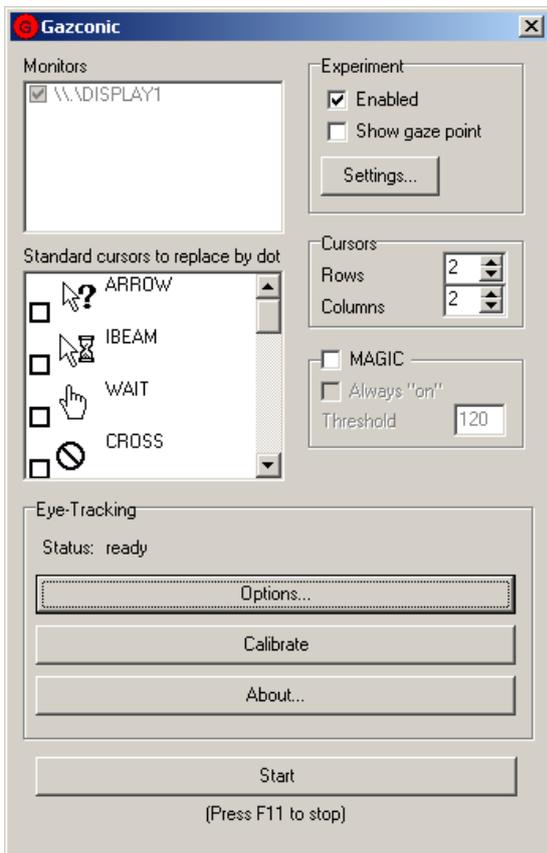
By enabling experiment you get a controlled experiment which saves data to a log file. If you have enabled an experiment the screen will turn to something that looks like Picture 11 when you run the program. The program logs how fast you click on the green targets on different settings. For more information about what experiments could be done, read Spakovs paper Disambiguating Ninja Cursors with Eye Gaze, available at Spakovs home page: <http://www.cs.uta.fi/~oleg/public.html>.



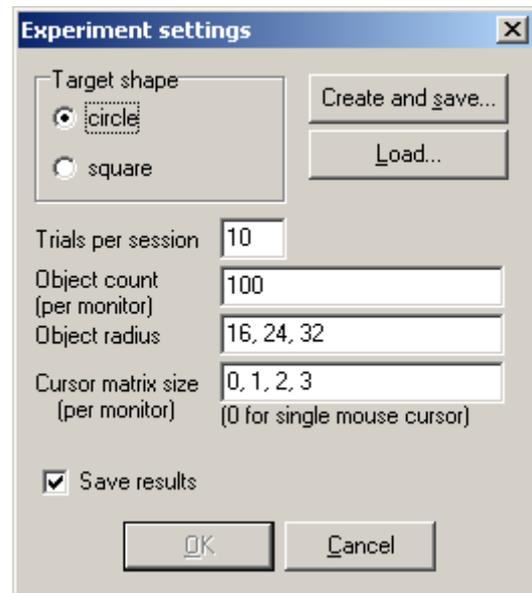
Picture 2

Get going

The download includes a standard installation executable. It installs the application and a Data Analyzer. When you start the program you get the following interface (Picture 3):



Picture 3 – main user interface.



Picture 4 – experiment settings

By enabling experiment you get a controlled experiment which saves data to a log file. In the settings dialogue box you first enter the settings you would like to use, then you click “Create and save” to save the experiment settings. Then you can press OK. For more information about what experiments could be done, read Spakovs paper Disambiguating Ninja Cursors with Eye Gaze, available at Spakovs home page: <http://www.cs.uta.fi/~oleg/public.html>.

If you run the program without experiment enabled you can try the Gaze controlled ninja cursors in the Windows GUI. The cursor-settings “Rows” and “Columns” changes the numbers of cursors available displayed on the screen.

Before you start the cursors you have to set up the program for your eye tracker; click on the “Options” button. On the “Device” tab you can select which eye tracker device you have, or one of several simulators. “Tobii 3” is for the T/X series of eye trackers, “Tobii 2” is for older eye trackers. When you’ve selected the right device press the “Device and API-Converter options...” to configure your eye tracker.



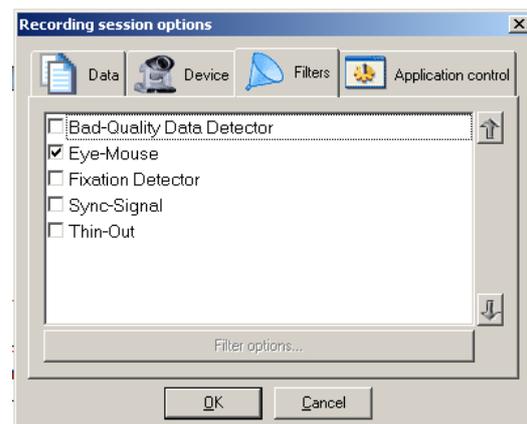
Picture 5 - settings



Picture 6- Tobii 2 settings

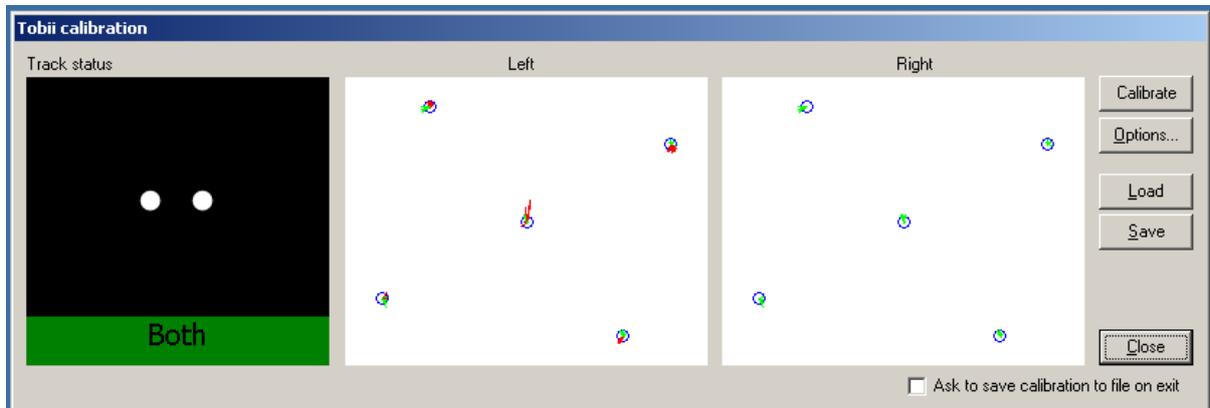


Picture 7 – Tobii 3 settings



Picture 8 - Filters

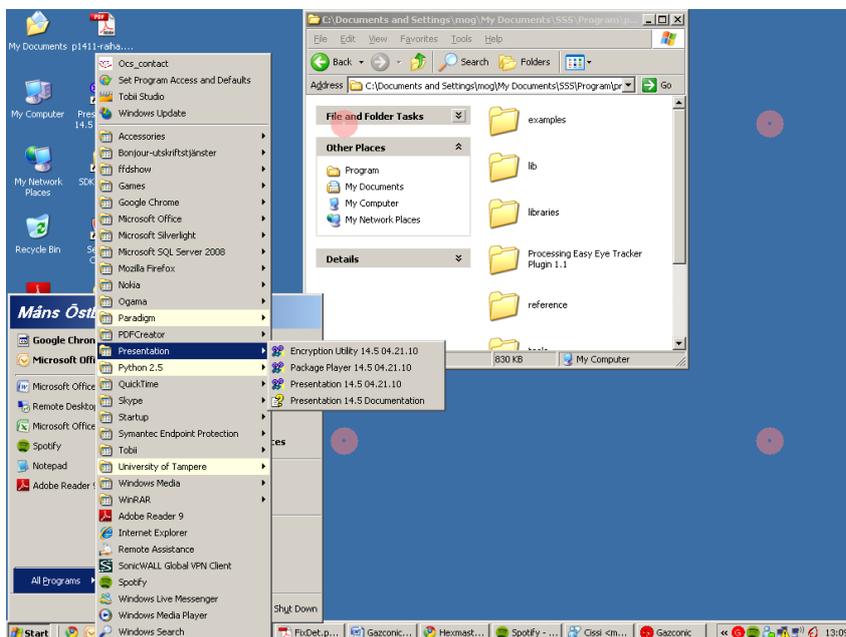
When you are finished with the options you need to calibrate the eye tracker. Click on “Calibrate” and you get the following screen:



Picture 9 – Calibration windows

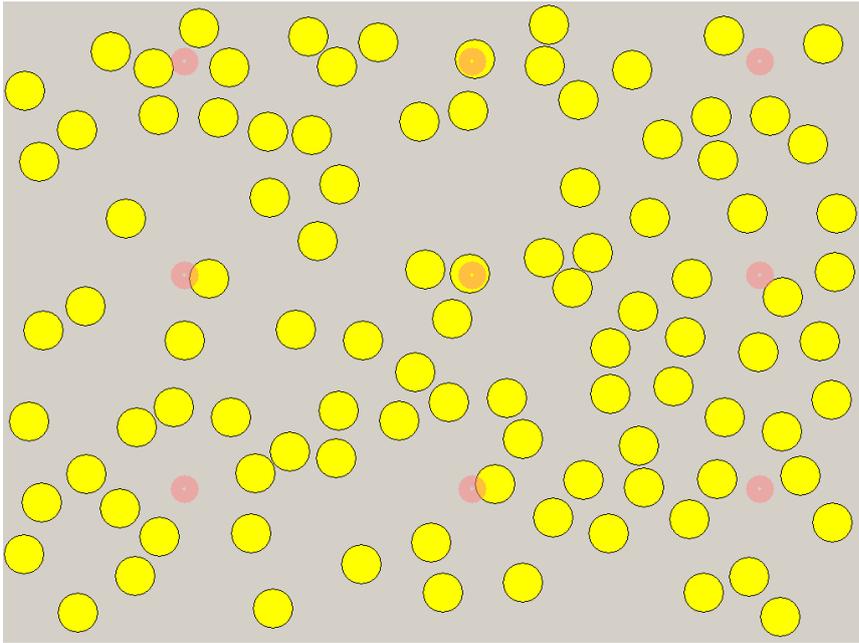
Make sure the eye tracker tracks both your eyes and select Calibrate. You also have the possibility to save and load calibrations for different people. When you have finished the calibration you can close the calibration windows and start the gaze cursors by pressing start.

Unless you enabled experiment you now get a number of red circles on the screen. They all move with the mouse, and the cursor will always be at the circle closest to the gaze. To get back to normal mode you press F11 or double click on the Gazconic cursor down by the clock.



Picture 10

If you have enabled an experiment the screen turn to something that looks like Picture 11. The program logs how fast you click on the green targets on different settings.



Picture 11