3D motion CAPTCHA demo

Alexander Pyattaev
Tampere University of Technology
Tampere, Finland
alexander.pyattaev@tut.fi

Vladimir Sadovnikov
St-Petersburg University of Telecommunications
Saint-Petersburg, Russia
sadko@skri.sut.ru

Abstract

The original challenge response systems like popular CAPTCHA have been made to protect against automated spam bots. They worked exceptionally well, but the spammers continue looking for the other ways to get through. The progress in OCR gradually forces administrators to use harder challenges, which hinder usability. The images that can not be cracked by OCR are sent to low-cost human solvers. As a result, conventional CAPTCHA is like a tiny lock that anyone can pick when needed.

We have designed a new system that could be used instead of classic CAPTCHA. It uses animated 3D scene as a challenge medium, which creates significant difficulties for automated analysis and decreases the productivity of the professional human solvers. A 3D animated scene is rendered on a server into series of vector commands and sent over to the client to be played back on a web page. The user's task is to analyse the relations between trajectories of the objects in 3D, and then click one of the objects whose type and trajectory match description. As a result, we expect to achieve complete filtration of all automated systems and at least 5 times decrease in productivity of massive human-assisted attacks.

The novel approach is based on dynamic content rendering capabilities of HTML5 that allow creation of interactive environments anywhere on the page without any proprietary tools like Adobe Flash. This ensures perfect portability, even for mobile platforms. Since the new system does not require keyboard input, it is also suitable for touchscreen devices.

On the demo session You will be able to try the new system yourself, understand the implementation details and contribute ideas to the development. We will have both touchscreen and mouse input methods for You to try, as well as some other CAPTCHA systems for comparison.