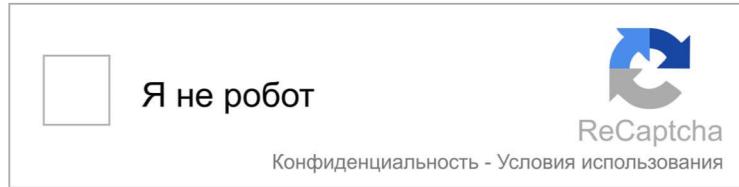


Biometric identification with the basis of the touch screen using the technology of deep learning

Anisimov A.A.

Problem



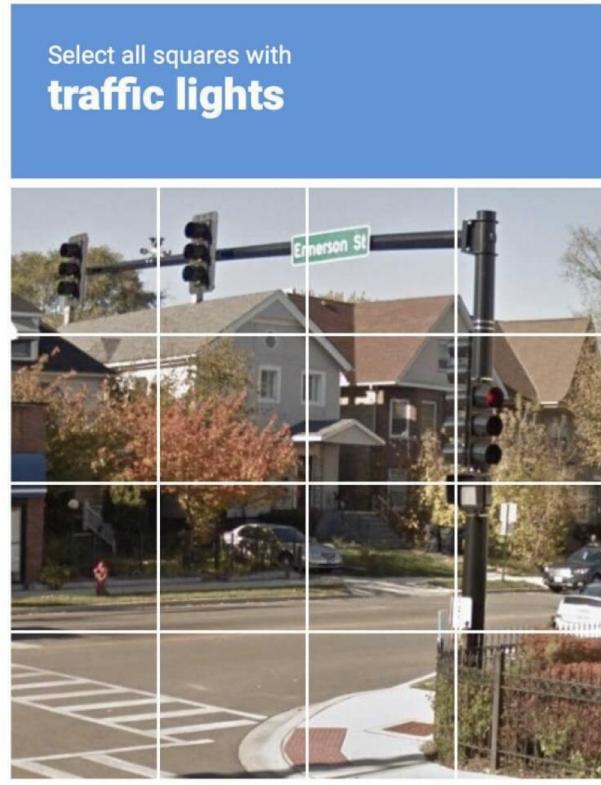
We have all encountered the "I am not a robot" (CAPTCHA)

Often: CAPTCHA is difficult to solve by the user,
but it is quickly recognized by bots.

Bad CAPTCHA on sites leads to the following:

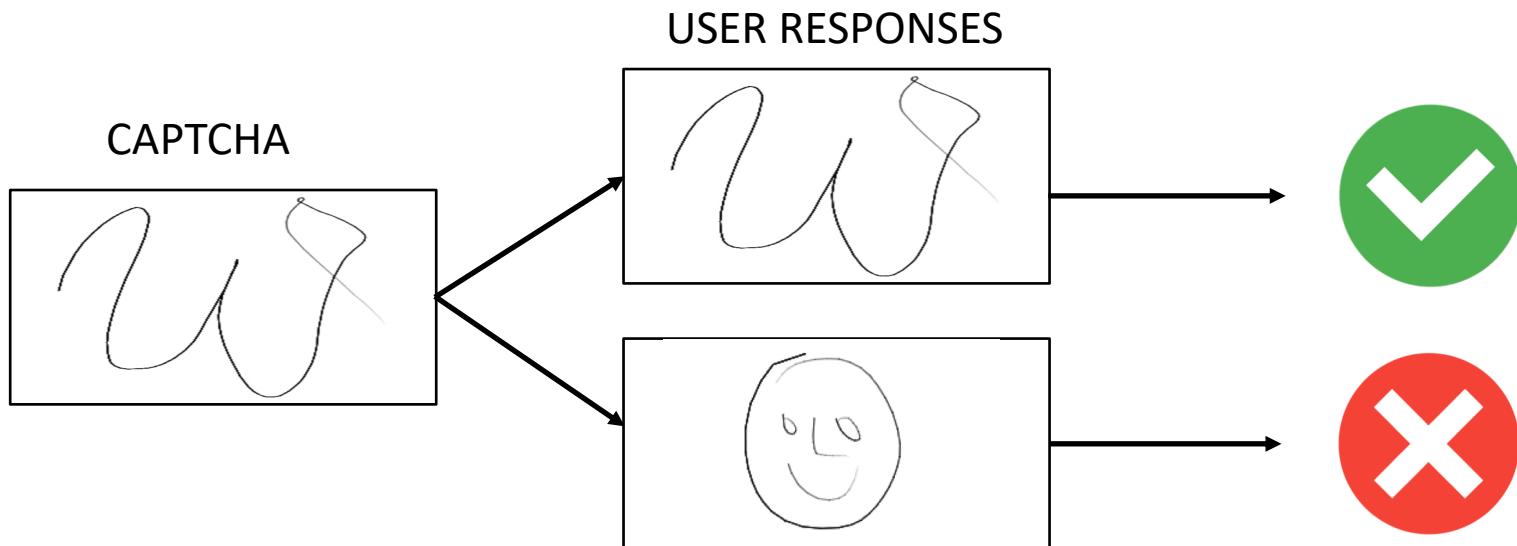
- reduced conversion rate
- huge bot activity
- user annoyance
- significant waste of users' time

Examples: spam in social networks and news sites, SMS costs,
copying online databases from sites, government resources



Solution

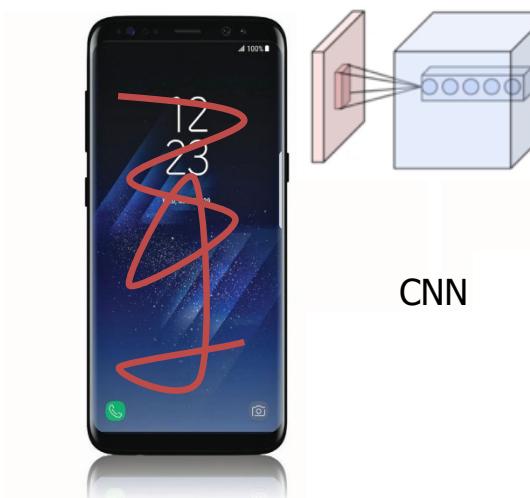
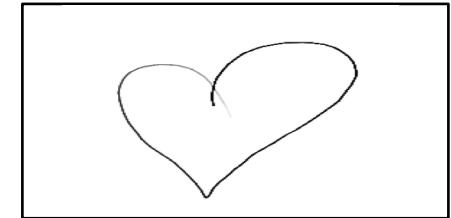
CAPTCHA in a new way: repeating a drawing



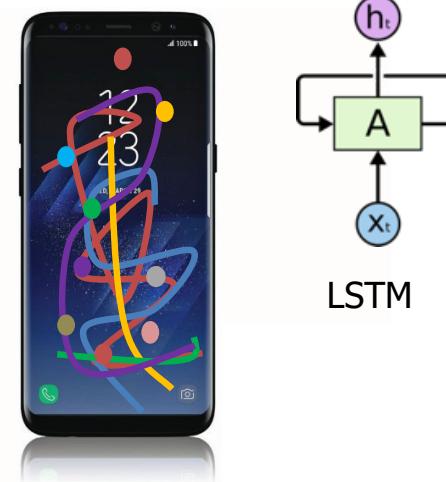
Solution

- interesting for users - game form
- filtering out bots that can pass protection
- increase conversion rates through fast and easy verification using deep learning technologies

CAPTCHA



CNN



LSTM

Scientific and technical novelty

Scientific publications:

- 4 scientific publications
- In April 2020, R&D was completed under the program of the Foundation for promoting innovation, supported by a grant (CONTRACT (AGREEMENT) No 12935GU/2018 dated 03.05.2018, to provide a grant to perform research and evaluate the prospects for commercial use of the results in the framework of an innovative project on the theme "Development of a biometric identification system based on a touch screen using neural networks for mobile devices").
- According to the results of R&D a certificate of registration of the computer program No 2019661961 dated 12.09.2019 (RU2019661961) "biometric identification Program based on a touch screen using neural networks for mobile devices»

Within the framework of R&D a scientific justification was obtained for the possibility of protecting websites using this technology.

It is necessary to study the possibility of using indicators of additional internal devices for mobile devices - accelerometer, gyroscope, etc. (there are foreign separate articles, but there is no General approach).

РОССИЙСКАЯ ФЕДЕРАЦИЯ



ФЕДЕРАЛЬНАЯ СЛУЖБА
ПО ИНТЕЛЛЕКТУАЛЬНОЙ СОБСТВЕННОСТИ
ГОСУДАРСТВЕННАЯ РЕГИСТРАЦИЯ ПРОГРАММЫ ДЛЯ ЭВМ

Номер регистрации (свидетельства):

2019661961

Дата регистрации: 12.09.2019

Номер и дата поступления заявки:

2019660987 03.09.2019

Дата публикации и номер бюллетеня:

12.09.2019 Бюл. № 9

Контактные реквизиты:

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RU2019661961

Автор(ы):

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Правообладатель(и):

Анисимов Андрей Александрович (RU)

Название программы для ЭВМ:

Программа биометрической идентификации на базе сенсорного экрана с использованием нейронных сетей для мобильных устройств

Реферат:

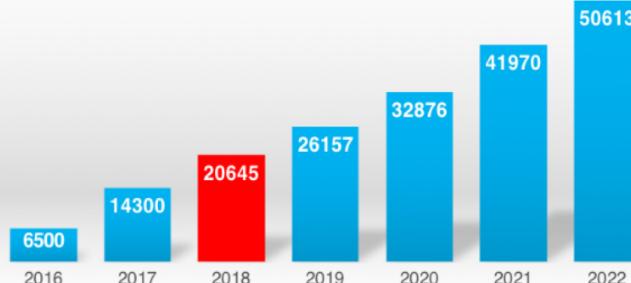
Программа биометрической идентификации на базе сенсорного экрана с использованием нейронных сетей для мобильных устройств, реализующего технологию биометрической идентификации, позволяет ограничивать доступ к мобильным устройствам или отдельным приложениям. Программа позволяет создавать биометрические образы, а также обучать нейронную сеть для дальнейшего использования цифрового образа для идентификации. Персональные данные отсутствуют. Тип ЭВМ: мобильное устройство с сенсорным экраном.

Язык программирования: Python, HTML, PHP, JavaScript

Объем программы для ЭВМ: 13 КБ

Market

Тенденция рынка биометрии, \$M



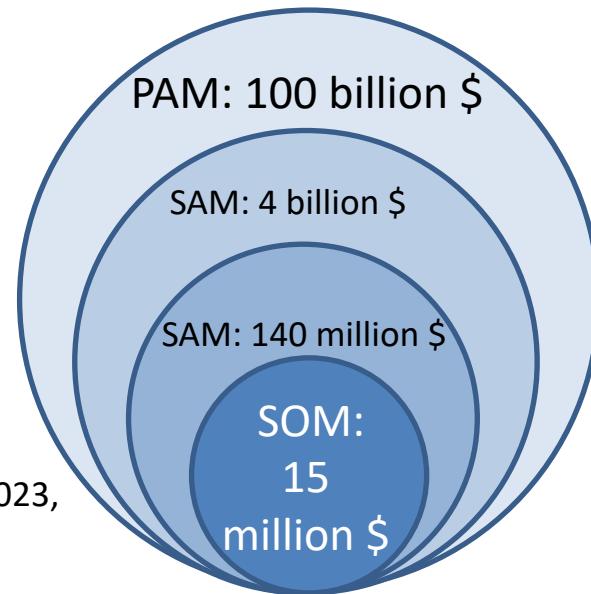
Источник: Acuity Market Intelligence

IDC forecasts that the volume of stored data in the world will double by 2023, and the total capacity of data storage will reach 11.7 zettabytes

According to Market Research Future (MRS) forecast, the global market for data management platforms (DML) it can reach \$ 3 billion by the end of 2023 with an average annual growth of 15%, and in 2025 its volume will exceed \$ 3.5 billion.

The volume of online advertising in Russia is 203 billion rubles, of which 9% is the targeted advertising market (<https://weekendagency.ru/marketing>), part of which is occupied by the sale of DMP

Our estimate



Competitors

	sCaptcha	reCaptcha	captcha.net	keycaptcha
		Select all squares with traffic lights 		
Information	Visual	Visual	Text	Visual
Difficulty for the user	Repeat the drawing	Found object	Repeat text	Collect the puzzle
Cost	Free	Free	Free	Free
Number of implementations	1	2 881 150	1 809 646	2 309
Major markets	Russia and further others	USA, England, France, Japan	Russia, Germany, China, Taiwan	Majority in Russia

Business model

Revenue sources: selling DMP (anonymized user data):

- Subscription fee for all segments: 300-500 thousand rubles per year.
- Per thousand impressions: 10-50 rubles CPM.
- Per user profile: 0.1-3 rubles per profile.
- Revenue share: 25% (data providers receive a portion of the advertising system's revenue)

Sales channels:

- conferences
- personal sales
- Internet (landing page and automated order creation system)
- PR activity
- government websites

Project team

Education:

the applicant of the PhD (UISU, HSE)

**Experience:**

4 years of entrepreneurship in IT, more than 10 years in Analytics

7 years of programming (php, C#, Java, Python)

scientific activity in the field of creating artificial intelligence systems, machine learning and deep learning

worked in IT integrator companies, has 1.5 years of banking experience in the field of Data Science in leading banks (VTB, Sberbank). He has 4 scientific publications, a patent for a computer program, as well as experience in 2 years of R&D implementation. He is a semi-finalist in the "Leaders of Russia" competition in the specialty "Science" (2020). Winner of international competitions Kaggle and AIJ.

Andrey Anisimov

CEO

The potential of the project

Today the project has statistically verified results of using users' biometric data to organize CAPTCHA verification.

By November 2020 it is planned to finalize the MVP and conduct a scientific study of the possibilities of using CAPTCHA verification of data from internal mobile devices - accelerometer, gyroscope, etc.

For a revenue stream of 4 million rubles in 2021 - an investment of 0.9 million rubles is required. If you invest more than 200 million rubles over two years, the revenue will be up to 1.1 billion rubles.

The investor is offered a share of up to 10% of the company, depending on the volume of investment.

sCaptcha

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