Participant Information Sheet

Study Title: How familiarity and AI image manipulation affect graphical password performance

Student Name: Cole Gibson

> You are being invited to take part in this research study. Before you decide, it is essential to read this leaflet to understand why the study is being conducted and what it entails.
>
> Reading this leaflet, discussing it with others, or asking any questions you may have will help you decide whether you would like to take part.

What is the purpose of the study?

This study examines the impact of AI-edited, AI-generated, and real images of locations on how people remember and recognise images when forming simple image-based passwords. It also examines how familiarity with Newcastle affects password accuracy and behaviour. Approximately 50 participants will participate, with half having strong familiarity and the other half having low familiarity.

Why have I been invited to take part?

You have been invited to take part as you meet the following criteria:

- You are an adult aged 18 years,
- You are either familiar or unfamiliar with Newcastle.

Do I have to take part?

You are under no obligation to take part, and you will not experience any loss of benefit or penalty if you choose not to participate.

What will I have to do?

- You will participate in a brief online visual memory task, which will last approximately 20 minutes.
- You will first be asked how familiar you are with Newcastle
- You will be shown a variety of images of Newcastle to remember over two sessions
- You can take breaks at any time and can withdraw immediately at any point.

What are the exclusion criteria (i.e. are there any reasons why I should not take part)?

You should not take part in this study if:

- Have uncorrectable visual impairments that make looking at images difficult
- Have diagnosed problems with memory

What are the possible disadvantages/risks in taking part?

There are no significant risks.

You may briefly experience eye strain from viewing images on a screen; you can take breaks as needed.

What are the possible benefits of taking part?

You will gain experience with a current research method in cybersecurity usability and contribute to understanding how AI-altered imagery affects password design and memory.

Will my taking part be kept confidential and anonymous?

Yes. You will be allocated a unique participant code that will be used to identify any data that you provide. Your name and other personal details will not be associated with your data, for example any signed informed consent forms will be stored separately.

Only the research team will have access to any identifiable information; paper records will be stored in a locked filing cabinet and electronic information will be stored on the secure University network (OneDrive). This will be kept separate from any data and will be treated in accordance with the Data Protection Act.

How will my data be stored?

All data will be stored on the University's OneDrive network and where appropriate additionally protected with a password. Any paper data collected will be locked away in a secure folder.

What will happen to the results of the study?

The results will be examined as part of a BSc in Computer Networks and Cyber Security. The results will contribute to the module KV6013 (Individual Computing Project) and may be summarised in the final dissertation. Occasionally, some results might be presented at a conference or published in a journal, but they will always remain anonymous. All information and data gathered during this research will be stored in accordance with the Data Protection Act and will be destroyed no later than three years after the study's conclusion. During that time the data may be used by members of the research team, only for purposes appropriate to the research question, but at no point will your personal information or data be revealed.

Who is organising and funding the study?

The present research project has received no funding.

Who has reviewed the study?

Name of relevant Department Ethics Lead: Tom Bartindale

Email: tom.bartindale@northumbria.ac.uk

How can I withdraw from the project?

The research you take part in will be most valuable if few people withdraw from it, so please discuss any concerns you might have with the investigators. During the study itself, if you do decide that you do not wish to take any further part then please inform the named student as soon as possible, and they will facilitate your withdrawal and discuss with you how you would like your data to be treated in the future. After you have completed the research, you can still withdraw your data by contacting the named student, giving them your participant number, or, if you have lost this, giving them your name.

If, for any reason, you wish to withdraw your data, please contact the investigator within a week of your participation. After this date, it may not be possible to withdraw your individual data, as the results may already have been published. As all data is anonymous, your individual data will not be identifiable in any way.

What happens if there is a problem?

If you are unhappy about anything during or after your participation, you should contact the named student in the first instance. If you feel this is not appropriate, you should contact the Computer and Information Sciences Departmental Ethics Lead via the contact details given above.

Contact for further information:

 Student email: Cole.Gibson@northumbria.ac.uk

 Project Supervisor email: james.nicholson@northumbria.ac.uk

Faculty of Engineering and Environment

INFORMED CONSENT FORM

Project Title: Can AI-generated Imagery be used as an effective alternative to recognisable graphical-based passwords

Student Name: Cole Gibson

please tick or initial
where applicable

I have carefully read and understood the Participant Information Sheet.	☐
I have had an opportunity to ask questions and discuss this study and I have received satisfactory answers.	☐
I understand I am free to withdraw from the study at any time, without having to give a reason for withdrawing, and without prejudice.	☐
I agree to take part in this study	☐

Signature of participant.. Date.....………………..

(NAME IN BLOCK LETTERS)...………………………………………….…………………….

Signature of student: Date.....………………..

(NAME IN BLOCK LETTERS) :