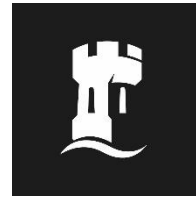# PROJECT INFORMATION

University of Nottingham
UK | CHINA | MALAYSIA

Date: 28/09/20
Project: Detecting GAN generated Aerial Images
School of Computer Science Ethics Reference:
Researcher: Matthew Yates
Supervisors: Dr Mercedes Torres Torres & Dr Robert Houghton

Purpose of the research:

The purpose of this research is to evaluate the current methods of generating false earth observation data. The aim of this research is to measure participants ability at differentiating between real aerial images and GAN (generative adversarial networks) synthesized fake images. This is part of a wider ongoing PhD project looking at detection methods, both human and computational, for spotting fake earth observation data. This study is in partnership with the Dstl who are involved as an industry partner to the PhD project.

Nature of participation:

Participation in this study consists of completing a short 5-10 minutes online task hosted on pavlovia.org. This task involves identifying the fake image in a series of image pairs depicting aerial satellite images of urban and rural environments. The experiment will record the accuracy of correct answers. At the start of the task the participant's level of experience level with looking at similar data (earth observation data, aerial imagery or GAN generated images) and the participants occupation. Your occupation is the only piece of personal data that the study will capture and we are looking for generic answers (e.g. 'geography student', 'computer vision researcher' or 'data scientist') rather than anything that might identify you (e.g. 'Head of Computer Science, UoN'). The online service does not capture any information, such as logging your IP address.

When answering the question on level of experience LOW, MEDIUM or HIGH should be given. Experience is defined as HIGH if the participant frequently works with earth observation data (e.g. aerial images) or GAN generated images, MEDIUM if they have some familiarity with either image type or frequent experience with other forms of digital imagery (e.g. photoshop) and LOW if the participant is does not have any familiarity or experience working with the aforementioned datatypes.

Benefits and risks of the research:

Your participation may help us understand more about the difficultly level of differentiating between GAN generated fakes and real images of satellite aerial imagery. The information regarding occupation and experience levels will also help us learn about the role of expertise in GAN detection and how different populations perform at the task.

Use of your data:
All data collected is anonymised and does not collect any identifying personal information. The data will be used in supervision sessions and project reports for the purposes of the research. The data may also be used in future publications related to this research and future work in this project.

Procedure for withdrawal from the research: You may withdraw from the study at any time and do not have to give reasons for why you no longer want to take part. If you wish to withdraw please contact the researcher who gathered the data. If you receive no response from the researcher, please contact the School of Computer Science's Ethics Committee.

Contact details of the ethics committee: If you wish to file a complaint or exercise your rights you can contact the Ethics Committee at the following address: cs-ethicsadmin@cs.nott.ac.uk

University Privacy Policy: It is recommended that before taking part in the study that you read the University's privacy policy regarding data protection. This can be found at: https://www.nottingham.ac.uk/utilities/privacy/privacy.aspx

Continue to the study.
If you have read though this information sheet and would like to take part in this study, continuing to the online task (at bottom of the information sheet) you will be consenting to the following:

Consent means:
1. Taking part in the study
   a) I have read and understood the project information sheet dated [?], or it has been read to me.
   b) I consent voluntarily to be a participant in this study and understand that I can refuse to participate and withdraw from the study at any time, without having to give a reason.
   c) I understand that taking part in the study requires me to state my occupation and experience of working with satellite imagery and answer anonymous questions about images.

2. Use of my data in the study
   a) I understand that data which can identify me (occupation) won't be shared beyond the project.
   b) I agree that the anonymous data provided by me may be used for the following purposes:
      o Presentation and discussion of the project and its results in research activities (e.g., in supervision sessions, project meetings, conferences).
      o Publications and reports describing the project and its results.
      o Dissemination of the project and its results, including publication of data on web pages (e.g. blog posts, documentary videos) and databases.

3. Reuse of my data
   a) I give permission for the anonymous data that I provide to be reused for the sole purposes of future research and learning.
   b) I understand and agree that this may involve depositing my data in a data repository, which may be accessed by other researchers.

4. Security of my data
   a) I understand that safeguards will be put in place to protect my data during the research, and if my data is kept for future use.
   b) I confirm that a written copy of these safeguards has been given to me in the University's privacy notice, and that they have been described to me and are acceptable to me.
   c) I understand that no computer system is completely secure and that there is a risk that a third party could obtain a copy of my data.

If you agree to the above, please continue to the study on pavlovia.org by clicking the link below:

https://run.pavlovia.org/Matty0512/realfakev2/html