Title of project:

Identifying StyleGAN images

Name: Neil Foxcroft
Supervisor: Dr. R. Serfontein

Starting date: 16/02/2021
End date: 08/11/2021

1. Have you read the information available related to research ethics (Chapter 5 of Researching Information Systems and Computing; BJ Oates and Chapter 13 of Writing for computer science, J Zobel; Manual for postgraduate studies, available on eFundi)?	Yes ✔	No

2. Do you make use of people as the source of data in your project (for example the completion of questionnaires or evaluation of products)?	Yes	No ✔

3. Are there any aspects of your research that you need permission from another party to use (for example use of property or tools)? If yes, provide more detail.	Yes	No ✔

4. Describe your research question and give a brief description of your plans for the collection of data.

With the development of this artefact, certain resources will be used to train the neural network. The training requires images that were generated by StyleGAN. For the comparison in the artefact images of real humans will be used.

The StyleGAN generated images are available on the official StyleGAN GitHub repository. Included in this repository is trained StyleGAN models and multiple datasets of StyleGAN generated images. The licencing of these images is stated on the GitHub repository and is a Creative Commons license by NVIDIA Corporation (Karras *et al*., 2019).

For the verified human faces, the preliminary dataset that will be used is the Flickr Faces dataset that was initially used to benchmark StyleGAN. The individual images were published in Flickr by their respective authors under either Creative Commons, Public Domain. All of these licenses allow free use, redistribution, and adaptation for non-commercial purposes (Karras *et al*., 2019).

With the identified need for detection of StyleGAN images and the discussed security implications that the invention of StyleGAN and similar methods introduced the proposed project aims to detect these images with the use of a trained neural network. The main research question that this proposed project aims to answer is: How can StyleGAN generated images be detected?

Data that will be used in this proposed project is free to use data sets provided in the StyleGAN repository and the Flickr Faces dataset. These datasets stated in their respective repositories that they are included with a creative commons license that will allow me to use them for my research purposes.

5. Describe how you plan to provide information about yourself and the goals of your research to participants.

This proposed project will not require any participants

6. Describe what methods you will use to get permission from participants in your study.

This proposed project will not require any participants

7. Will you be able to ensure that participants' information will be used in an anonymous, private, and confidential way? How? This proposed project will not require any participants	Yes ✔	No

8. Are there any foreseeable risks of damage (physical, social, or psychological) to participants or the environment? If you answer yes, give detail of the preventative measures you will follow.	Yes	No ✔

9. Are there any foreseeable risks to the NWU, for example, lawful actions that may follow the research or damage the image of the university? If yes, give detail.	Yes	No ✔

10. Are there any other ethical issues that may occur during the execution of the research (for example conflicting interests)? If yes, provide detail and explain how you plan to manage them.	Yes	No ✔

I hereby declare that the information contained in this form is accurate. I have attempted to identify the risks that may arise in conducting this research and acknowledge my obligations and the rights of the participants. I confirm that the research will be conducted in line with all University, legal and ethical standards.

Name of student: Neil Foxcroft

Signature:_____
Date: 18/04/2021

Name of study leader: Dr R. Serfontein

Signature: _____
Date:

Name of an additional moderator:

Signature: _____
Date: