

## Participant Information Sheet

### ***Study title: 3DFace@Home - A pilot study for robust and highly accurate facial 3Dreconstruction from mobile devices for facial growth monitoring at home***

#### **We are inviting you to take part in a research study**

Before you decide whether to take part, we want you to understand why we are doing this study and what it would involve for you. Please take your time to read this information carefully. You're welcome to ask us any questions and to talk it over with others if you'd like. We'll do our best to answer your questions and provide any additional information you need. You do not have to decide right away.

This study is being conducted by the 3DFace@Home team at the University of Dundee and University of Glasgow led by Dr Ludovic Magerand and co-investigators Prof. Ashraf Ayoub and Prof. Peter Mossey. Dr Narges Tabatabaey will be a post-doctoral research assistant in this project.

#### **Why are we doing this study?**

Our goal is to develop and evaluate, irrespective of facial aesthetic, a system building accurate and fully personalized facial 3D model from 2D images obtained through your own mobile device at home. Facial dysmorphia is not represented in existing datasets used for benchmarking such systems. To remedy this, we create a dataset which include, but not limited to, examples of dysmorphia. This work will enable future research into rare genetic conditions that affect facial morphology, and has the potential to translate into personalized and at-home medical care, reducing costs and environmental impact of care related to facial dysmorphia. We also aim to provide the scientific community with a subset of the dataset from willing participants to bolster further research in this area.

#### **What is being tested?**

The feasibility to create a system building accurate and fully personalized 3D facial models from 2D images acquired with a mobile device at home suitable for a wide range of facial morphology, including, but not limited to, examples of dysmorphia.

#### **Why have I been contacted?**

By taking part in building this dataset, you'll help develop a new system that can use facial pictures taken at home with a mobile app to create accurate and fully personalized 3D model of the face, facilitating research into conditions affecting facial anatomy and potential related medical application in the future. You're invited to take part to provide data that can be used to develop and evaluate the system. The dataset we create needs to contain a wide variety of facial aesthetic and features including, but not limited to, examples of facial dysmorphia. To ensure this, the project is being advertised to relevant NHS patients, through support groups organisation related to facial dysmorphia, and among local communities of the University of Dundee and Glasgow. There is no differentiation made during the data acquisition depending on how you have been informed of the project. All participants are treated equally, and no medical information is requested nor recorded.

#### **Do I have to take part?**

No. It is up to you to choose, taking part in this study is entirely up to you. You can choose to take part or choose not to take part. If you choose to take part you can stop the study at any time. You 3DFace@Home, Participant Information Sheet (V1 – 17.07.2025), IRAS: 353492

do not have to give a reason for not taking part or for stopping. If you do not want to take part or want to stop the study the medical care you get and your relationship with the medical or nursing staff looking after you will not be affected.

### **What will happen to me if I take part?**

There are four steps in taking part for this research, illustrated in the flowchart at the end of this document. The total duration of involvement is expected to be two hours, not considering travel time, split equally between the at-home and in-person acquisition.

*Step 1 (information and consent).* You will be asked to express your interest in participating by filling out our contact form. This will provide us with your email so we can contact you to organise the data collection. You will receive the participant documentation, including the online consent form, and be offered an opportunity to ask any question you may have about participating. You will then have to confirm that you meet the study selection criteria: being at least 18 years old, not having facial hairs (beard or moustache), willing to picture your whole face (ears to ears and neck to hairs), choose at least one of the pre-scheduled in-person appointment at the University of Dundee or Glasgow and have a mobile device to run our mobile application to take the facial images. The online consent form will provide you with options on how we can use your data:

- By default, your data will only be used by the team involved in the 3DFace@Home project. It will not be used to create illustrations for any publications or materials, nor be shared with anyone outside the project team. We will store it securely within University of Dundee systems.
- You may allow your images to be used to generate illustrations for scientific publications or materials for presenting the research to the scientific community. This is optional and will likely make you identifiable in publicly available resources such as scientific journals or conferences.
- You may decide to share your data with the scientific community outside of the project team. This will facilitate further research in 3D reconstruction by researchers. If you agree to this, your facial images, 3D model, camera calibration, pseudo-anonymous volunteer ID and choices will be shared with approved researchers. We will not share your name or contact details.
- You may allow the project team to use your data for any related follow-up projects.

We will respect all the choices you make and value your contribution whatever they are.

*Step 2 (home acquisition).* Once we obtain and checked your online consent form, you will receive confirmation of your participation and scheduled in-person appointment with a pseudonymous volunteer ID used to identify your data in the dataset and consisting of a unique and random 12 characters long identifier required to access the app. You will also get instructions on how to install and use our mobile application to take a set of up-to 20 facial images at home guided by the app. You will need to take the pictures outside or in a room with sufficient light to ensure good images. Note that the background of the images will be removed by us before adding them to the dataset and the app will collect anonymous calibration information of the camera to facilitate the 3D reconstruction. Ideally, this step should be done the same day as Step 3. However, if this is inconvenient, you will be able do this the day before. If you encounter any issues while making this acquisition, you can proceed to the next step where assistance will be provided to make the acquisition with the research team.

*Step 3 (in-person acquisition).* You attend the in-person appointment where we will make a 3D scan of your face using the [VECTRA H2 3D Imaging System](#). It takes place at the University of Dundee ([Queen Mother Building, room 106]) or University of Glasgow ([Old Dental Hospital, level 6]) chosen in Step 1 and confirmed when you receive the volunteer ID. This acquisition will provide a reference 3DFace@Home, Participant Information Sheet (V1 – 17.07.2025), IRAS: 353492

3D model we can use to evaluate the performance of our system. At this appointment, we will also ask you to make another acquisition with the mobile app under our supervision, this provides a set of images in a controlled environment which we can use in case the one taken at home would be unworkable. Once you have completed this step, we will verify your data, automatically remove background from images, and then add it in the main dataset including only the 2D facial images, the 3D facial model, camera calibration, choices about data use and pseudonymous volunteer ID.

*Step 4 (user experience survey).* You will be asked to fill a short online survey about the user experience of the mobile app so that we can improve it. You can do this whenever you want after the in-person acquisition. The survey is entirely anonymous and will not be stored in the dataset. It will only be used to determine how we can make the mobile app easier to use.

During Steps 2 and 3, you will be asked to take all pictures and the 3D scan with a neutral facial expression. We want to reassure you that we do not judge any of your capacity at any step and that we always value your contribution.

Note that our mobile application “3DFace@Home” is being developed specifically for us in this project by Konglomerate Games and will be improved in the future based on the feedback collected in Step 4. It is only used for research purposes and has no certification. It can be downloaded from the app store of Apple and Android platforms but required a valid volunteer ID to be used.

#### **Will taking part in the study affect my usual care?**

No. Neither your healthcare team nor your GP will know whether you participated or not, and your care will not be affected in any way. The data collection is made outside of your medical care and does not involve your healthcare team.

#### **What are the possible benefits of taking part?**

There are no direct benefits other than the satisfaction of contributing to a scientific project that may ultimately reduce the need for in-person acquisition of facial 3D scans, particularly for people with medical conditions affecting facial morphology. You will be compensated for your time and travel costs with a £30 Amazon voucher and enter a raffle for a chance to win an additional one.

#### **What are the possible disadvantages and risks of taking part?**

There are no expected risks of physical or mental harm and no direct expenses associated with this research other than travel costs and use of your mobile device. We recommend using a Wi-Fi connection with the mobile app as the images will be transmitted at full resolution which generate a lot of traffic.

For participants who agree to share their data with the scientific community, there are some risks associated with your data being stored and processed by approved researchers. While the End User License Agreement (EULA) requires them to keep your data secure and restricts how it can be used, we cannot guarantee this will always be the case. To minimize these risks, we limit data access to researchers who work for UK/EU – based organisations, receive public research funding and have obtained ethical approval to use the data. This set of conditions help ensure that your data remains protected under data protection laws similar to those in the UK.

#### **Who is organising and funding this research?**

This study is being sponsored by the University of Dundee. It is being funded by a UK Research and Innovation - Engineering and Physical Sciences Research Council (EPSRC). The study is being organised by Dr Ludovic Magerand.

### **What if something goes wrong?**

If you are concerned about your participation in the study, you have the right to discuss your concern with a researcher involved in the study. If you have concerns about the study or a complaint about your participation, please talk to the researchers in the project team first.

If you are not satisfied, you can make a formal complaint to a senior member of the research team or to the Complaints Officer for *[NHS Tayside: Patient Experience Team, NHS Tayside, Ninewells Hospital, Dundee DD1 9SY -- Freephone: 0800 027 5507 -- Email: TAY.feedback@nhs.scot]*

If you think you have come to harm due to taking part in the study there are no automatic arrangements to get financial compensation.

The University of Dundee is sponsoring the study. The University of Dundee holds clinical trials indemnity cover which covers the University's legal liability for harm caused to participants.

### **Who has reviewed this study?**

This study has been reviewed and approved by East of Scotland Research Ethics Service (EoSRES), an independent group responsible for reviewing research involving people to ensure it is ethical and safe. The REC has raised no objections to the study going ahead.

### **How will we use information about you?**

We will need to use information from you for this research project.

This information will include your name and contact details in the online consent form, and mobile device camera calibration, facial images and 3D facial model in the data collection, which are considered personal data because they could identify you. People will use this information to do the research or to make sure that the research is being done properly. People who do not need to know who you are will not be able to see your name or contact details. Your data will have a pseudonymous volunteer ID instead. Because of the nature of facial images, we cannot fully remove the possibility that someone could identify you from the data.

Only the data of participants who have explicitly consented to specific uses will be shared or used in study outputs. You can choose which types of data use you agree to when you complete the online consent form. You do not have to agree to every use in order to take part.

The University of Dundee is the sponsor for this study and is responsible for looking after your information and using it properly. We will keep all information about you safe and secure by:

- Storing your data on secure university systems with encryption and access restrictions.
- Allowing only authorised research staff to access or process your data.
- Using secure platforms for storing and transferring files.
- Never storing your name and contact details with the facial images or 3D facial models.

We may share your data outside the UK for research purposes, but only if you have given specific consent for this in the consent form. We will only share the minimum data necessary. Identifying information such as your name or contact details will not be shared, but because this project uses facial images and 3D models, complete anonymity is not possible.

If your data is shared within or outside the UK, it may be with:

- Researchers approved to access the dataset
- Collaborating researchers in other countries
- Cloud platforms used for secure storage or transfer

We will protect your data when it is shared internationally by:

- Only sharing your data with researchers which are in the EU where laws with a similar level of protection to data protection laws in the UK exists.
- Using contracts approved for use in the UK that give your data the same level of protection it has under UK law.
- Requiring anyone accessing your data to follow strict data protection and confidentiality procedures.
- Ensuring that technical and organisational measures are in place to prevent unauthorised access or misuse.
- Having procedures to manage and report any data breach in line with UK data protection law.

Once we have finished the study, we will keep your data for at least 10 years after the end of the study. We will keep it to check study results, to share it with the scientific community or for approved future research, if you have agreed to this. After this, your data will either be securely archived or destroyed.

Because your data includes facial images, full anonymisation is not possible. Any illustrations or visual data used in reports, academic publications, presentations or other public materials will only be included if you have given explicit permission in the consent form. We will write any reports or publish findings in a way that does not include your name or contact details.

#### **What are your rights and choices about how your information is used?**

- You can stop taking part at any time, without giving a reason. If you withdraw, we will not collect new information about you. We will keep the information we have already collected.
- You have the right to ask us to access, delete or change the data we hold about you. Sometimes we may not be able to do this if it would affect the integrity of the study — we will tell you if this is the case. If you have agreed to share your data with the scientific community, we will request approved researchers to also delete your data.
- If you have agreed for your data to be used in publications, we may not be able to remove it once the publications have been publicly shared — but we will explain this clearly to you.

#### **How we will approve researchers to access the dataset?**

Only the data from participants who have explicitly consented to sharing their data with the scientific community will be made available to researchers external to the study. This sharing is so that other researchers can either develop their own facial 3D reconstruction system or evaluate their work in similar conditions to ours. Access will only be granted to researchers providing the access committee with evidence of working for a UK or EU based research organisation from which they obtained ethical approval to use the data within a publicly funded project related to facial 3D reconstruction. Approved researchers will also be required to sign an End User License Agreement<sup>1</sup> requiring them to:

- Not copy, share, modify or re-publish the dataset in any form.
- Not use facial images or 3D models from volunteers for any presentation or publication, except for those volunteers having consented to this use.
- Only use the data for research in facial 3D reconstruction without annotated it with medical information or processing it for medical analysis purposes.

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<sup>1</sup> A working copy of this document can be provided by the research project team upon request.  
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- Abide by GDPR and data protection standards (i.e. keep the data on secure storage, only for the duration needed, deleting the data upon request, etc.).

The data sharing platform of the University of Dundee will be used to share the data with approved researchers. Systems belonging to the research organisation of the approved researchers will be used to store and process the data.

**Where can you find out more about how your information is used?**

You can find out more about how we use your information, including the specific mechanism used by us when transferring your personal data out of the UK. You can find out more by:

- Speaking to the research team
- Sending an email to: [3DFaceAtHome@dundee.ac.uk](mailto:3DFaceAtHome@dundee.ac.uk)
- Contacting the University of Dundee Data Protection Officer at: [dataprotection@dundee.ac.uk](mailto:dataprotection@dundee.ac.uk)
- Visiting <https://www.dundee.ac.uk/information-governance/data-protection> to see the ways that personal data is used by the University of Dundee

Acquisition Flowchart

