

**Privacy notice** (created 27.3.2024, updated 2.10.2025) for scientific research  
EU General Data Protection Regulation (EU 2016/679), art. 12, 13, 14

**1. Title, nature and duration of research**

Title of research: Gamified augmented reality applications for observing trees and forests using LiDAR / Consortium: GamiLiDAR

- ☒ Case study  
☐ Follow-up study

Duration of research: 1.1.2024-31.12.2025

Duration of data processing: From 1.1.2024 until research indicated in the research plan is completed. Data will be stored 1-5 years after the end of the research project to complete in-progress research.

**2. Data Controller**

☒ Research will be conducted in an employment contract with the Tampere University, indicating the University to be the data controller.

Tampere University Foundation sr  
33014 Tampere University  
Kalevantie 4, 33100 Tampere  
Business ID: 2844561-8

Data Protection Officer of Tampere University [dpo@tuni.fi](mailto:dpo@tuni.fi)

**3. Principal investigator or research group**

The Principal Investigator is a person assigned by the Data Controller to oversee the implementation of the research project. A research group may also be assigned to serve as the Principal Investigator.

Name: Timo Nummenmaa

Contact detail:

Email: [timo.nummenmaa@tuni.fi](mailto:timo.nummenmaa@tuni.fi)

Phone: +358504201506

Address: Kalevantie 4, 33014 Tampereen yliopisto

**4. Researchers**

The project is collaboratively conducted with UEF. The research takes place within the Research Center of Gameful Realities at TAU and Vastaranta Research Syndicate at UEF. The following named researchers currently conduct research activities where they may be in contact with personal data. Due to the project length, the list is updated when necessary.

Timo Nummenmaa (TAU)  
Samuli Laato (TAU)  
Ville-Veikko Uhlgren (TAU)  
Juhani Linna (TAU)  
Kaisa Liimatainen (TAU)  
Mikko Vastaranta (UEF)  
Philip Chambers (UEF)

Tuomas Yrttimaa (UEF)  
 Aapo Erkkilä (UEF)  
 Teemu Kamula (UEF)  
 Kaisa Liimatainen (TAU)  
 Jiangnan Xu (TAU)

## 5. Content of research records

Personal data to be processed:

Voice: in video and audio recordings.

Possible identifiers in the video and audio: Voice, clothing, face.

Possible identifiers in point cloud data: Clothing, face.

Names and contact information: collected for contact purposes.

## 6. Sources of personal data

Sources of the data being gained or collected: Participant interviews and transcriptions.

Screen captures and audio recordings of activities. Video footage of participants using GamiLiDAR prototype applications or other related mobile applications. Point cloud data from GamiLiDAR prototype applications.

## 7. Purpose of processing personal data

The purpose of processing personal data is scientific research.

In GamiLiDAR, gamified augmented reality applications are developed to observe trees and forests using light detection and ranging (LiDAR) technology in consumer devices. The approach enables data collection while experiencing gameful interaction, enhancing the capacity to collect forest data and making the experience engaging. We produce proof-of-concept applications that are used to 1) collect point cloud and other spatial data to derive forest characteristics, and 2) gather behavioral data to gain insight into how user actions relate to the collected forest characteristics and to the applied game mechanics. The research has been conceived as a spin-off of the UNITE flagship and is conducted at Tampere University and The University of Eastern Finland.

## 8. Lawful basis for processing personal data

The lawful basis for processing is the EU General Data Protection Regulation Article 6 Paragraph 1 and the Data Protection Act (1050/2018) 4 §:

- ☒ Public interest or the exercise of official authority
    - ☒ Scientific or historical research purposes or statistical purposes
    - ☐ Archiving of materials relating to research or cultural
  - ☐ Consent
  - ☐ Legal obligation of the data controller
  - ☐ Legitimate interests of the Data Controller or a third party
- Please specify the legitimate interests:

☐ Other, please specify:

**9. Sensitive personal data (special categories of data and criminal records)**

- ☒ No sensitive personal data will be processed during the research project
- ☐ The following types of sensitive personal data will be processed during the research project:
- ☐ Racial or ethnic origin
  - ☐ Political opinions
  - ☐ Religious or political beliefs
  - ☐ Trade union membership
  - ☐ Genetic data
  - ☐ Biometric data to uniquely identify a person
  - ☐ Health data
  - ☐ Data concerning a natural person's sex life or sexual orientation

Will personal data concerning criminal convictions and offences be processed during the research project?

- ☒ No
- ☐ Yes

**Lawful basis for processing of sensitive personal data:**

The lawful basis for processing is EU General Data Protection Regulation, Articles 9 (special categories of personal data) and 10 (personal data relating to criminal convictions and offences), and the Data Protection Act (1050/2018) 6§ and 7§

- ☐ Consent of the data subject
- ☐ The processing activities relate to personal data that has been manifestly made public by the data subject
- ☐ The processing activities are conducted for the purpose of scientific or historical research in the public interest, for statistical purposes, or in connection with the exercise of official authority
- ☐ The processing of personal data is necessary for archiving purposes in the public interest

**10. Regarding a joint controllership in a collaborative research project: the parties and their responsibilities**

The research project is collaborative, but Tampere University is the data controller.

**Contact Person.** Research subjects will be advised to send all requests relating to the research (including subject access requests referred to in Section III of the GDPR) to the contact person identified here: Timo Nummenmaa (timo.nummenmaa@tuni.fi, +358504201506)

**11. Transfer of data to external parties** (Transfer means that some other party will process personal data and return the results to data controller)

- ☐ Personal data will be regularly transferred to parties other than the members of the research group.

Please describe the type of data that will be transferred, the recipient and the legal grounds for transferring personal data:

Processing activities will be outsourced (for example to a subcontractor). Please, specify:

- ☐ Data will be disclosed. To whom it will be disclosed, please specify:  
What is the legal basis to disclose data, please specify:

## 12. Transfer or disclosure of data outside the EU/EEA

Will data stored in the research records be transferred to a country or an international organisation that is located outside the EU/EEA?

- ☒ No  
☐ Yes, please specify (contact always Data Protection Officer):  
Description of the measures taken to protect data:

## 13. Data protection principles

Protection of manual materials (e.g. paper documents):

- ☒ In a locked room  
☒ In a locked cupboard  
☐ Other, please specify: Kirjoita tekstiä napsauttamalla tai napauttamalla tätä.

Protection of digital materials (e.g. information systems and equipment):

- ☒ usernames  
☒ password  
☒ multi-factor authentication (MFA)  
☐ access management (IP address)  
☐ collection of log data  
☐ physical access control  
☐ other, please specify

Processing of data that directly identifies an individual:

- ☐ Directly identifiable data will be removed during the analysis stage  
☒ The materials will be pseudonymised  
☐ The materials will be analysed without removing directly identifiable data, because (please provide the reasons for retaining personally identifiable data): Kirjoita tekstiä napsauttamalla tai napauttamalla tätä.

Protecting data in transit:

- ☒ secure transmission, please specify: transmission using secure protocols (not plain text)  
☐ file encryption, please specify: Kirjoita tekstiä napsauttamalla tai napauttamalla tätä.  
☐ other, please specify: Kirjoita tekstiä napsauttamalla tai napauttamalla tätä.

## 14. Processing of personal data after the research project has been concluded

- ☐ The research records will be destroyed  
☒ The research records will be anonymised and archived without personally identifiable data  
☐ The research records will be archived without anonymisation

Where will the research materials be stored and for how long: Data is stored (using TAU and UEF provided and recommended solutions for data storage) 1-5 years after the project has concluded to complete in-progress research. Analyses and findings based on / and derived from the data may exist in the form of e.g., scientific publications and other relevant forms in which the data is conserved without compromising participant anonymity in any way.

### **15. Data subjects' rights and possible restriction thereof**

Data subjects have the following rights under the EU's General Data Protection Regulation (GDPR):

- Right of access
  - o Data subjects are entitled to find out what information the University holds about them or to receive confirmation that their personal data is not processed by the University.
- Right to rectification
  - o Data subjects have the right to have any incorrect, inaccurate or incomplete personal details held by the University revised or supplemented without undue delay. In addition, data subjects are entitled to have any unnecessary personal data deleted from the University's systems.
- Right to erasure
  - o In exceptional circumstances, data subjects have the right to have their personal data erased from the Data Controller's records ('right to be forgotten').
- Right to restrict processing:
  - o In certain circumstances, data subjects have the right to request the University to restrict processing their personal data until the accuracy of their data, or the basis for processing their data, has been appropriately reviewed and potentially revised or supplemented.
- Right to object
  - o In certain circumstances, data subjects may at any time object to the processing of their personal data for compelling personal reasons.
- Right to data portability
  - o Data subjects have the right to obtain a copy of the personal data that they have submitted to the University in a commonly used, machine-readable format and transfer the data to another Data Controller.
- Right to lodge a complaint with a supervisory authority
  - o Data subjects have the right to lodge a complaint with a supervisory authority in their permanent place of residence or place of work, if they consider the processing of their personal data to violate the provisions of the GDPR (EU 2016/679). In addition, data subjects may follow other administrative procedures to appeal against a decision made by a supervisory authority or seek a judicial remedy.

Contact information:

#### **Office of the Data Protection Ombudsman**

Street address: Lintulahdenkuja 4, 00530 Helsinki, Finland

Postal address: PO Box 800, FI-00531 Helsinki, Finland

Switchboard: tel. +358 29 56 66700

Fax: +358 29 56 66735

Email address: [tietosuoja@om.fi](mailto:tietosuoja@om.fi)

The Data Controller follows a GDPR-compliant procedure for responding to subject access requests.