

# **Research project**

"Multimodal Dataset of Assembly Tasks"

#### Short description of the research project:

Human robot collaboration (HRC) has the potential to transform the manufacturing processes by combining the strengths of humans and robots. In effective HRC systems, robots should be able to understand human intentions, actions and to predict their next moves. Recognizing human intentions and actions, however, is a challenging task for a robot. In this work, we aim for developing multimodal algorithms for the recognition of human intentions and actions from multimodal data streams, with the final aim of improving the performance of HRC systems. For training such algorithms, a multimodal dataset is needed. While there are many public datasets available in domestic domains, in the industrial domain they are very limited. Thus, we aim for collecting a multimodal dataset that covers different assembly tasks in the industrial domain, which can then be used in a second step to train and test our multimodal algorithms for action, plan, and intention recognition.

# Researchers involved in the research project:

Principal investigator: Angelika Peer

Project team member(s): Oswald Lanz, Zahid Razzaq; Sumegh Tharewal, and Edoardo Bianchi

# Data protection information pursuant to Articles 13 and 14 of EU REGULATION 2016/679 (General Data Protection Regulation, hereinafter "GDPR'')

Dear Participant,

Thank you for your participation in the above-mentioned research project conducted by the Faculty of Engineering.

The following information is provided in accordance with GDPR 2016/679 and the relevant national legislation in force:



**1. Data controller:** is the Free University of Bozen-Bolzano, located in Piazza Università n. 1, 39100 Bolzano, in the person of the President and legal representative pro tempore.



**2. Data protection officer (DPO)** of the Free University of Bozen-Bolzano can be contacted at the following e-mail address: privacy@unibz.it





#### 3. Categories of data processed

**3.1** The collection and/or processing of the following personal data is necessary for the execution of the above-mentioned research project: Personal data in terms of name, surname, email address and phone number will be used to contact the participants to find a viable date for the laboratory experiments. Video recordings are made to allow capturing the human activities during the assembly tasks. Recorded faces will be blurred after the recording sessions.



#### 4. Purpose of processing

- **4.1.** Your personal data, including audio and video recordings of your person, will be processed exclusively within the framework of the above-mentioned research project at the Faculty Engineering of the Free University of Bozen-Bolzano under the direction of the Principal investigator: Prof. Angelika Peer.
- **4.2.** Personal data will be used exclusively for the purposes of the above-mentioned research project, i.e. the recording of a multimodal dataset of assembly tasks.



 $\overline{\mathbf{V}}$ 

#### 5. Methods of processing

- **5.1** Personal data will be processed in accordance with the principles of fairness, lawfulness and transparency, minimization and restriction of data storage, accuracy, integrity and confidentiality, in full compliance with the GDPR and the relevant national legislation and will be carried out in such a way as to ensure their security.
- **5.2** Processing of personal data may be carried out by manual operations and/or by the use of computer and telematic tools, either by persons specifically appointed and authorized to process personal data in accordance with Article 29 of the GDPR, operating under the direct authority of the Data Controller, who has instructed them to do so, or by subjects qualified as Data Processors in accordance with Article 28 of the GDPR (e.g. cloud providers, ...).
- **5.3.** Audio and video recordings may be transcribed, stored, computerised and collected for scientific purposes only.
- **5.4** The processing of personal data for scientific purposes may also be carried out beyond the period of time necessary to achieve the various purposes for which the data were originally collected or processed in accordance with Art. 5.1 (b) GDPR. In any case, all the safeguards set out in Art. 89 of the GDPR and in the "Deontological rules for processing for statistical or scientific research purposes published pursuant to Art. 20, par. 4 of Legislative Decree n. 101 of 10 August 2018" shall be applied to the processing.
- **5.5** The data will be processed making sure that any reference that could be related to a specific person will be minimised. Personal data in terms of names and contact details will be deleted permanently, faces in video data will be blurred.



# 6. Data recipients

**6.1** Personal data, with the exception of sensitive data and judicial data, may be communicated with autonomous determination and exclusively for scientific research purposes to the subjects indicated in Art. 100 of Legislative Decree 196/2003 (e.g. project assistants, experts in the field, etc.) who may subsequently process them for the only purposes for which they have been disclosed and always in compliance with all the restrictions set out in the Legislative Decree n. 196/2003 (Art. 97 ff.), in the GDPR (Art. 89) and in the "Deontological rules for processing for statistical or scientific research purposes published pursuant to Art. 20, paragraph 4, of Legislative Decree 10 August 2018, n. 101".



**6.2** Operations of "dissemination" and "communication" of data in scientific publications, conferences, seminars, lectures will take place only in anonymous and/or aggregate form and, in any case, in a way that does not make the data subject identifiable.



### 7. Transfer of personal data to third countries

**7.1** Personal data will be processed by the Data Controller within the territory of the European Economic Area (EEA).

Should it be necessary, for technical and/or operational reasons, to make use of subjects (e.g. suppliers) located outside the European Union, such subjects, if they process personal data on behalf of the Data Controller, will be appointed as Data Processors in accordance with Art. 28 of the GDPR. The transfer of personal data will be possible within the restrictions and under the conditions referred to in Articles 44 et seq. of the GDPR and therefore only:

- to countries subject to an adequacy decision by the European Commission (Art. 45 of the GDPR);
- to countries located outside the EEA, subject to the signing of the Standard Contractual Clauses adopted/approved by the European Commission in accordance with Art. 46(2)(c) (d) of the GDPR and in any case only in the presence of appropriate safeguards;
- towards subjects that have an international organization and have provided for the signing, at group level, of specific Binding Corporate Rules, as referred to in Article 47 GDPR;
- when the data subject has given his/her explicit consent, in the performance of a contract or precontractual measures for the establishment or defend of legal claims or to protect the vital interests of
  a data subject or other persons and the data subject is physically or legally incapable of giving consent
  (Art. 49 GDPR).



### 8. Storage periods

**8.1** Personal data will be stored for a period of 1 month and then anonymized or irreversibly deleted.



#### 9. Provision and source of data

**9.1** The provision of data is necessary for the execution of the research project and does not derive from a legal obligation. Any refusal to provide the data or any lack of consent to their processing will not lead to any consequences other than the impossibility to participate in the research project.

**9.2** Personal data are directly provided by the data subject.



# 10. Legal basis of processing

- **10.1** The lawfulness of the processing of personal data is based on:
  - the consent expressed by the data subject (art. 6, par. 1(a) and art. 9, par. 2(a) of the GDPR)
  - performing a task in the public interest (art. 6, par. 1 lett. e. of the GDPR)
  - processing is necessary for the establishment, exercise or defence of legal claims (art. 9, par.
     2 (f) of the GDPR
  - processing is necessary for archiving purposes in the public interest, scientific or historical research purposes or statistical purposes in accordance with Article 89 (1) of the GDPR (Art. 9, par. 2 (j) of the GDPR)

**10.2** Your consent is required for the processing of audio and/or video recordings, also pursuant to the provisions of copyright law. If you do not consent, no audio or video recordings will be made.



#### 11. Automated decision-making

**11.1.** You shall not be subject to a decision based solely on automated processing of the personal data provided by you which produces legal effects concerning you or similarly significantly affects you.

#### 12. Rights of the data subject





**12.1** In your quality of data subject and participant in the research project in question, you have the rights set out in sections 2, 3 and 4 of Chapter III of the GDPR (e.g. you can request from the Data Controller the access to your personal data or their rectification and cancellation or restriction of processing as well as the right to object to their processing).

# **12.2.** You also have the right to:

- withdraw your consent at any time without affecting the lawfulness of the processing based on
  the consent given before its withdrawal. In this case, no further data concerning you will be
  collected, without prejudice to the use of any data already collected in order to establish,
  without altering them, the results of the research or of any data which, originally or after their
  processing, cannot be traced back to an identified or identifiable person;
- lodge a complaint with the relevant national supervisory authority (Data Protection Authority, <a href="https://www.garanteprivacy.it">www.garanteprivacy.it</a>) as well as to exercise the other rights recognised by the applicable legislation (Art. 15 ff. GDPR).

Regarding the exercise of these rights, you may contact Angelika Peer (<a href="mailto:angelika.peer@unibz.it">angelika.peer@unibz.it</a>; +39 0471 017766) and send a copy of the request to <a href="mailto:privacy@unibz.it">privacy@unibz.it</a>

Having read the above privacy policy, I hereby:
☐ give my consent
□ deny my consent
to the processing of my personal data, including special categories of personal data
Place, date
legible signature
Disclaimer statement
For the RESEARCH PROJECT: (insert title of research project)
DATE/PERIOD of registration:
PLACE of registration:
The undersigned:



e-mail address
hereby authorizes
the Free University of Bozen-Bolzano, pursuant to Articles 96 and 97 of Law no. 633/1941:
1) to record on the date of with video and audio camera his/her image/voice and the statements made during (indicate e.g. lecture, event, meeting, interview,);
2) to use them for research purposes.
and furthermore declares
<ul><li>a) that he/she is aware that the Free University of Bozen-Bolzano will not derive any financial gain from such use;</li><li>b) that he/she waives any remuneration for the reproduction, processing, etc. of the data.</li></ul>
Place, date
(legible signature)