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## Plan Overview

*A Data Management Plan created using DMPonline*

**Title:** Master's Thesis: Designing Emotionally Expressive Behaviors for an Appearance-Constrained Robot

**Creator:** Fernando Corte Vargas

**Principal Investigator:** Joost Broekens, Jens Kober

**Data Manager:** Joost Broekens, Jens Kober, Bernhard Hilpert

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**Template:** TU Delft Data Management Plan template (2021)

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### Project abstract:

The goal of this research is to investigate what features of motion, light, and sound in the behaviors of a non-humanoid, faceless robot may be perceived as emotional. To do this, a group of about 500 people will be recruited through Amazon's Mechanical Turk to respond to an online survey in which they will watch a series of videos of a robot executing certain behaviors, and will then rate any emotion qualities of the robot's behavior that may be perceived.

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**Last modified:** 10-04-2024

# Master's Thesis: Designing Emotionally Expressive Behaviors for an Appearance-Constrained Robot

## 0. Administrative questions

### 1. Name of data management support staff consulted during the preparation of this plan.

My faculty data steward, Sara Shoghi, has reviewed this DMP on 03-04-2024

### 2. Date of consultation with support staff.

2024-03-11

## 1. Data description and collection or re-use of existing data

### 3. Provide a general description of the type of data you will be working with, including any re-used data:

Data

Type of data	File format(s)	How will data be collected (for re-used data: source and terms of use)?	Purpose of processing	Storage location	Who will have access to the data
Anonymized data on ratings of emotional perception from human participants of an appearance-constrained robot	.csv files	Online survey on Qualtrics	To understand any possible patterns in the recognition of emotional qualities of the behaviors of an appearance-constrained robot based on the modalities of light, motion and sound	TU Delft Project Data Storage (U:)	All three supervisors and myself
Informed consent form data	.csv files	Online survey on Qualtrics	This data will be collected prior to the beginning of the research survey. In order to be able to participate, each participant must give consent according to this form	TU Delft Project Data Storage (U:)	All three supervisors and myself
Videos of the appearance constrained robot that will be used for the online survey	.mp4 files	Video recordings	These videos will be used for the online survey, and will be stored for future research as well.	TU Delft Project Data Storage (U:)	All three supervisors and myself
Data with the input parameters that were used to generate each of the videos of the appearance constrained robot that will be used for the online survey	.csv files	Python script	This data is generated using a script that generates Sobol numerical sequences that are translated into the input parameters for the videos.	TU Delft Project Data Storage (U:)	All three supervisors and myself

### 4. How much data storage will you require during the project lifetime?

- 250 GB - 5 TB

Since the data will consist of a single .csv file, and no more than 1024 20-second long videos, the required data storage is not expected to surmount more than 500 GB.

## II. Documentation and data quality

### 5. What documentation will accompany data?

- Data dictionary explaining the variables used
- Data will be deposited in a data repository at the end of the project (see section V) and data discoverability and re-usability will be ensured by adhering to the repository's metadata standards
- Methodology of data collection
- README file or other documentation explaining how data is organised

A README file will be created to make sure that the structure of the data is explained, as well as to clarify how the data can be used. Access to the dataset will be granted to researchers who want to use it, upon inspection and approval by one of the principal researchers.

Additionally, a data dictionary will be created for both the anonymized ratings from the participants (survey data), as well as for the data describing the input parameters of the videos of the robot.

## III. Storage and backup during research process

### 6. Where will the data (and code, if applicable) be stored and backed-up during the project lifetime?

- Project Storage at TU Delft

## IV. Legal and ethical requirements, codes of conduct

### 7. Does your research involve human subjects or 3rd party datasets collected from human participants?

- Yes

### 8A. Will you work with personal data? (information about an identified or identifiable natural person)

*If you are not sure which option to select, first ask your [Faculty Data Steward](#) for advice. You can also check with the [privacy website](#) . If you would like to contact the privacy team: [privacy-tud@tudelft.nl](mailto:privacy-tud@tudelft.nl), please bring your DMP.*

- No

### 8B. Will you work with any other types of confidential or classified data or code as listed below? (tick all that apply)

*If you are not sure which option to select, ask your [Faculty Data Steward](#) for advice.*

- No, I will not work with any confidential or classified data/code

### 9. How will ownership of the data and intellectual property rights to the data be managed?

*For projects involving commercially-sensitive research or research involving third parties, seek advice of your [Faculty Contract Manager](#) when answering this question. If this is not the case, you can use the example below.*

The ownership of the datasets and intellectual property rights underlying this research will be transferred to Joost Broekens,

associate professor at Leiden University and at TU Delft. He is also a principal investigator of this study.

#### 10. Which personal data will you process? Tick all that apply

As a manager of a survey on Amazon Mechanical Turk, the only data I can see from the participants is their Worker ID which consists of a unique number that cannot be traced back to them (so, it cannot be used for re-identification). I do not have access to their names, emails or any other personal data. IP addresses are not stored by either MTurk or Qualtrics.

Amazon MTurk collects their workers' email address and bank account information. However, this personal data is managed by Amazon Web Services, and I will not have access to it at any point.

To approve payment of the participants, I will be able to see which participant (identified by their Worker ID) gave consent to participate in the study and which did not. Upon successful completion of the survey, the participants will get a unique code generated by Qualtrics, which they will submit on MTurk. After I review their submission, and if the code they submitted is valid, I will approve payment. The payment is then processed by Amazon Web Services.

#### 11. Please list the categories of data subjects

Adults

#### 12. Will you be sharing personal data with individuals/organisations outside of the EEA (European Economic Area)?

- No

#### 15. What is the legal ground for personal data processing?

- Informed consent

#### 16. Please describe the informed consent procedure you will follow:

All study participants will be asked for their consent for taking part in the study and for data processing before the start of the survey. We will not collect the participant's written signatures since it is an online survey. The informed consent form is digital.

#### 17. Where will you store the signed consent forms?

- Same storage solutions as explained in question 6

The answers of the digital consent forms is part of the data from the survey. Therefore, they will also be stored in the same .csv file.

#### 18. Does the processing of the personal data result in a high risk to the data subjects?

If the processing of the personal data results in a high risk to the data subjects, it is required to perform [Data Protection Impact Assessment \(DPIA\)](#). In order to determine if there is a high risk for the data subjects, please check if any of the options below that are applicable to the processing of the personal data during your research (check all that apply).

If two or more of the options listed below apply, you will have to [complete the DPIA](#). Please get in touch with the privacy team: [privacy-tud@tudelft.nl](mailto:privacy-tud@tudelft.nl) to receive support with DPIA.

If only one of the options listed below applies, your project might need a DPIA. Please get in touch with the privacy team: [privacy-tud@tudelft.nl](mailto:privacy-tud@tudelft.nl) to get advice as to whether DPIA is necessary.

If you have any additional comments, please add them in the box below.

- None of the above applies

**19. Did the privacy team advise you to perform a DPIA?**

- No

**22. What will happen with personal research data after the end of the research project?**

- Other - please explain below

All data that will be collected is anonymous by default, since no personal research data will be collected.

**23. How long will (pseudonymised) personal data be stored for?**

- Other - please state the duration and explain the rationale below

The answers to the digital consent forms will be stored for at least two years.

**24. What is the purpose of sharing personal data?**

- Other - please explain below

No personal data will be shared.

**25. Will your study participants be asked for their consent for data sharing?**

- Yes, in consent form - please explain below what you will do with data from participants who did not consent to data sharing

If a participant does not consent, they are automatically redirected to the end of the survey and therefore cannot participate in the experiment.

## **V. Data sharing and long-term preservation**

**26. What data will be publicly shared?**

- All data (and code) produced in the project

All data and will be made available to any researcher who requests it to the principal investigators.

**27. Apart from personal data mentioned in question 22, will any other data be publicly shared?**

- All other non-personal data (and code) produced in the project

**28. How will you share your research data (and code)?**

- All data will be uploaded to 4TU.ResearchData

**29. How will you share research data (and code), including the one mentioned in question 22?**

- All anonymised or aggregated data, and/or all other non-personal data will be uploaded to 4TU.ResearchData with public access

**30. How much of your data will be shared in a research data repository?**

- 100 GB - 1 TB

**31. When will the data (or code) be shared?**

- At the end of the research project

**32. Under what licence will be the data/code released?**

- CC BY-NC-SA

## **VI. Data management responsibilities and resources**

**33. Is TU Delft the lead institution for this project?**

- Yes, leading the collaboration - please provide details of the type of collaboration and the involved parties below

TU Delft is leading the collaboration between all parties involved, which are Leiden University and TU Delft itself.

**34. If you leave TU Delft (or are unavailable), who is going to be responsible for the data resulting from this project?**

The principal investigators Jens Kober ([J.Kober@tudelft.nl](mailto:J.Kober@tudelft.nl)) and Joost Broekens ([joost.Broekens@gmail.com](mailto:joost.Broekens@gmail.com), [D.J.Broekens@liacs.leidenuniv.nl](mailto:D.J.Broekens@liacs.leidenuniv.nl) and [D.J.Broekens@tudelft.nl](mailto:D.J.Broekens@tudelft.nl)).

**35. What resources (for example financial and time) will be dedicated to data management and ensuring that data will be FAIR (Findable, Accessible, Interoperable, Re-usable)?**

4TU.ResearchData is able to archive 1TB of data per researcher per year free of charge for all TU Delft researchers. We do not expect to exceed this and therefore there are no additional costs of long term preservation.

# Planned Research Outputs

## Dataset - "Emotional rating"

Dataset containing the ratings of the research videos in terms of their categorical, dimensional and appraisal-based affective qualities.

## Audiovisual - "Research videos"

Videos of the appearance-constrained robot executing emotional behaviors based on the modalities of motion, light and sound.

### Planned research output details

Title	Type	Anticipated release date	Initial access level	Intended repository(ies)	Anticipated file size	License	Metadata standard(s)	May contain sensitive data?	May contain PII?
Emotional rating	Dataset	2024-09-01	Restricted	None specified	100 MB	Creative Commons Attribution Share Alike 4.0 International	None specified	No	No
Research videos	Audiovisual	2024-09-01	Restricted	None specified	500 GB	Creative Commons Attribution Share Alike 4.0 International	None specified	No	No