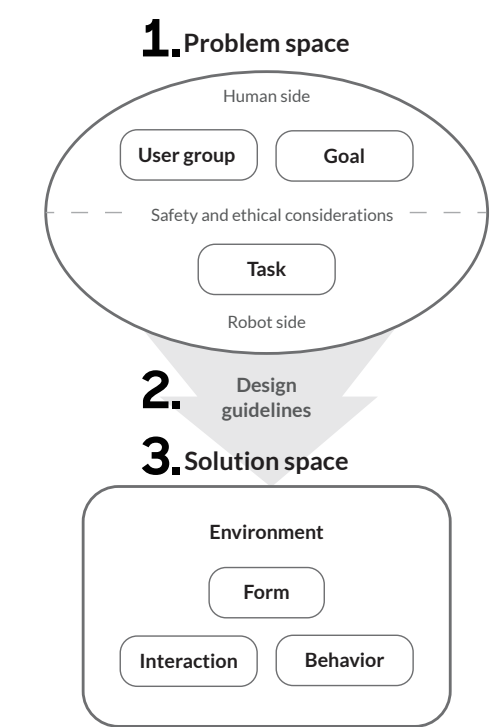


# Canvases for the Process of Designing Social Robots



1. Defining the problem
2. Creating guidelines
3. Defining the solution
4. Iterate! After user and expert feedback, redefi-  
ne your problem space, guidelines,  
and solution.

## 1. The Problem Space

What is the problem worth solving?  
Define it clearly through the user  
and the robot.

**PROBLEM SPACE OF DESIGNING A ROBOT**

What is the problem worth solving? Define it clearly through the user and the robot.

**USER(S)**

Group(s) Characteristics Needs

**Goal(s)**

What goals do you have for your robot? What goals do you have for the user?

**Ethical considerations**

What are the ethical considerations of your robot? What are the ethical considerations of the user?

**Task(s)**

What tasks do you want your robot to perform? What tasks do you want the user to perform?

**Advantage(s)**

What advantages do you want your robot to have? What advantages do you want the user to have?

**ROBOT**



**ETHICAL CONSIDERATIONS OF THE ROBOT**

What are the ethical considerations of your robot? What are the ethical considerations of the user?

**Physical safety**

What are the physical safety considerations of your robot? What are the physical safety considerations of the user?

**Safety of data**

What are the safety of data considerations of your robot? What are the safety of data considerations of the user?

**Transparency**

What are the transparency considerations of your robot? What are the transparency considerations of the user?

**Equality across users**

What are the equality across users considerations of your robot? What are the equality across users considerations of the user?

**Emotional consideration**

What are the emotional consideration considerations of your robot? What are the emotional consideration considerations of the user?

**Behaviour enforcement**

What are the behaviour enforcement considerations of your robot? What are the behaviour enforcement considerations of the user?



## 2. Guidelines

Create guidelines for your future  
robot. How will your problem be  
answered by the design?

**ROBOT DESIGN GUIDELINES**

What are the guidelines that guide the design of the robot? What are the guidelines that guide the design of the user?

**Ethical guidelines**

What are the ethical guidelines of your robot? What are the ethical guidelines of the user?

**Advantage guidelines**

What are the advantage guidelines of your robot? What are the advantage guidelines of the user?

**Environment guidelines**

What are the environment guidelines of your robot? What are the environment guidelines of the user?

**Form guidelines**

What are the form guidelines of your robot? What are the form guidelines of the user?

**Interaction guidelines**

What are the interaction guidelines of your robot? What are the interaction guidelines of the user?

**Behaviour guidelines**

What are the behaviour guidelines of your robot? What are the behaviour guidelines of the user?



## 3. The Solution Space

It's time to start designing your  
robot! The solution is visible in four  
dimensions: environment, form,  
interaction, and behaviour.

**1. ENVIRONMENT OF THE ROBOT**

Where? When?

End-users? Secondary users? Simultaneous users?

Name the role Role of the robot

What situation(s) does Interaction take place in? Situation flow

Human facilitators? Level of facilitation

**2. FORM OF THE ROBOT**

Appearance Draw a picture

Movement

Voice Sounds

Touch sensations Smell sensations

OR

**ROBOT DESIGN MVP**

Where? When? Name the role

Personality Data-based behaviour

Draw a picture Interaction modalities

Interaction outline

**3. INTERACTION WITH THE ROBOT**

Leadership Goal(s)

Modalities

Interaction outline

**4. BEHAVIOUR OF THE ROBOT**

Personality Motivation

Data-based behaviour Contextual adaptation

Social behaviours Social awareness

Connectivity Autonomy

### The Problem Canvas

Define who you are building for and why.  
What are the advantages? Always use  
this canvas first.

### The Ethics Canvas

How are ethics considered already in the  
definition of the problem? Use these six  
ethical considerations.

### The Guidelines Canvas

How will the definition of your problem  
and the ethics be visible in the final  
design? Make guidelines for different  
dimensions of the robot.

### The Environment Canvas

What is the context of the robot's opera-  
tion?

### The Form Canvas

What are the robot's outwardly percepti-  
ble qualities?

### The MVP Canvas

If you want to prototype rapidly, the "min-  
imum viable product" canvas can act as a  
replacement for the four dimensions.

### The Interaction Canvas

How does the robot interact with users?

### The Behaviour Canvas

What drives the robot's behaviour?