

SAIL

An Exploration of Self-Touch Through the
Medium of Textile for Well-being.



MASTER THESIS | AUGUST 2024

Design for Interaction
Faculty of Industrial Design
Delft University of Technology

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Chair
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Mentor
Dr. Stefano Parisi

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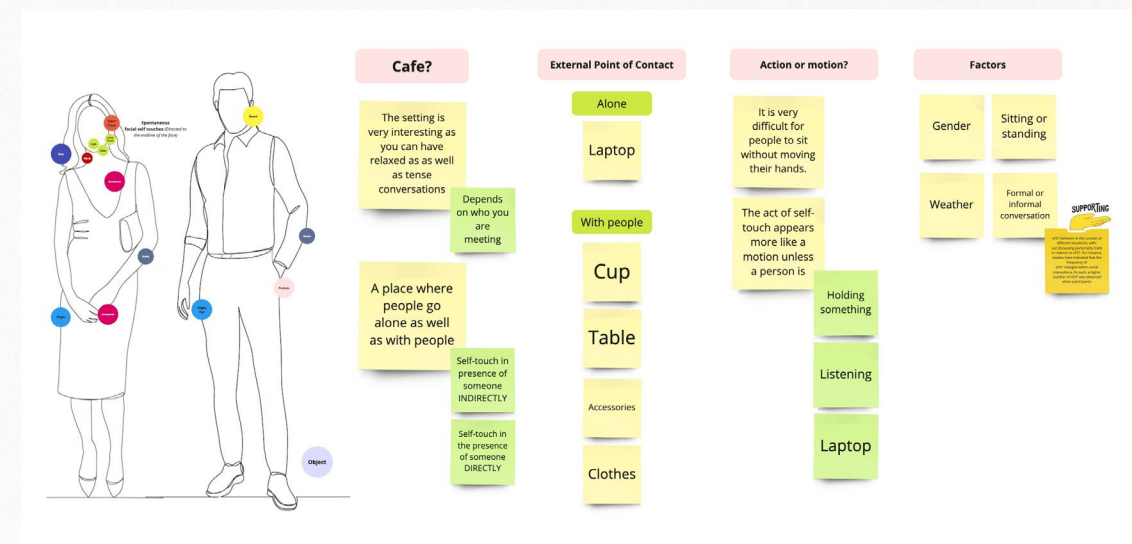
Video Ideation and Storyboarding

I

Approved Project Brief

A

Observation Study Analysis: Card Sorting and Mapping



B

Consent Form

Consent form

Participant ID: _____

You are invited to take part in a research study titled "Exploring self-touch through material-driven design," conducted by Sukriti Garg, MSc. Design for Interaction student at TU Delft, as part of her graduation thesis. The aim of this study is to **redefine and explore the potential of self-touch for well-being.**

The workshop will be conducted over **two sessions**, each lasting **45 minutes**.

Your participation in this study is **entirely voluntary**, and you have the right to **withdraw** at any time without providing a reason, without any consequences. You may also choose to **skip any questions** you prefer not to answer.

By signing this consent form, you **agree to participate in the study** and allow the use of any data collected for research purposes only. **Your privacy and confidentiality** will be strictly maintained, and all data will be anonymized.

Additionally, please indicate whether you grant permission for the session to be recorded and photographs to be taken during the workshop.

☐ I grant permission for the session to be recorded – video as well as audio.
☐ I grant permission for photographs to be taken during the session.

If you have any questions or wish to learn about the study's outcomes, you can contact Sukriti Garg at s.garg-3@student.tudelft.nl.

Participant Information:

Name: _____

Signature: _____

Date: _____

Researcher Information

Name: _____

C

Understanding of Self-Touch and Interpretation in Social vs Private Setting

Actions Noticed During the Conversation

What does self-touch mean to you?

skincare
massage
hugs

taking care of yourself
→ Loving yourself

Unconsciously → Thinking
coughing
picking
scratching

Consciously
touch face
palm
hands

What does Self-Touch mean to you?

- Taking care of myself
- Pleasure
- Warm up myself when I am cold
- Calm the nerves
- My body
- Massage
- Conscious
- Discover health issue that are not visible

Social Setting

- Walking into the room, looking off my backpack → relief
- Scratching myself → itchy - relieving
- Touching my hair to not mess it → better
- Sitting down and getting comfortable in the chair → awareness of my body's weight
- Scratching my back to stop itch again.
- Rubbing my lips (to taste) → sensual stimulation
- Resting my head on my shoulder → engaged in conversation and needed reflection.
- Pulling the sleeves of sweater often → more flexibility to move / cooling down.

What does self-touch mean to you?

Self-touch could mean touching myself through external factors. And while touching things would be a physical thing, I think that there is also a more psychological aspect to it. It is like for example touching the game if an anxiety. While I physically touch the game, I also connect back to it from a more psychological view point.

What does self-touch mean to you?

- Massage
- grooming
- masturbation
- therapy
- cosmetic/beauty
- physiotherapy
- self-awareness
- sensory stimulation
- sleeping
- Shaping your perception of your body
- Multisensory correspondence
- Pleasure reward
- using your hands
- using your feet

Social Setting

- Cross my legs
- Touch my hands for the nerves
- Scratch my hair
- Hunching: Too many people and loud noise makes me feel not very comfortable
- Too many children around makes me feel uncomfortable
- I imagined I was in the restaurant of Ikea, tied on the chair
- I won't spend a lot of time in that place

Social Setting

Coughing → ashamed? No like the feeling of I don't want to annoy someone

Tea → warm

Face → thinking

Legs → trying to get in the work mindset

Sitting with folded legs → Did not feel something

→ comfortable

(setting that I have in mind is,

Social Setting

I was imagining myself sitting in a cafe to work. (which was 2 days ago)

Then at some point at the day, I had a meeting with others in that cafe

- individual: (chaper)
- cross-legged sit
- think + index things under my chin and also sometimes my cheek
- making hair move
- as with others (attentive)
- clean hands on pants before sticky hands
- fingers against desk and mouth clean paying attention
- sitting non-crossed

Private Setting

I imagined myself walking back home (earlier)

- I will sometimes have my hands in my pocket
- I will feel the need to sometimes clean my glasses
- From the audio that was played during the session, I also imagined walking past a children playground on a sunny day. If the sun were to give light, I could then put my hand (right) horizontally against my forehead to block the sun and look in the distance
- I could

Private Setting

Sound was → from outside SO I assume location: at home during the day

I feel like I have more self touch during the night

Action: Sitting on the chair

Feeling: comfortable

Red: laying down → hands on stomach → comfortable

Feeling: something on my face

Eating → hands to mouth

Chilling → Boots

Private Setting

- Showering this morning → washing my face, clothing my eyes and feeling the edges of my hair to know how to guide my hands, by touch, around it.
- Disabling feel around my different limbs to touch myself
- Trying the shower and touching to fit on back, to feel warm and dry myself
- Touching myself today my body, like
- Touching my face to dry it and stop water from dripping down my face.
- Touching my hair to dry it and stop water from dripping down my face.
- Applying face cream and washing my face with sunscreen etc.

Private Setting

I imagined myself sitting in my balcony at my place. There is a lot of sun. I love when the sun touch my skin. It's sunny. so there is not a lot of people in the street and I can relax my back.

I imagined myself at home, next to my new plants. Looking the flowers. I didn't touch any plants because I was very relaxed.

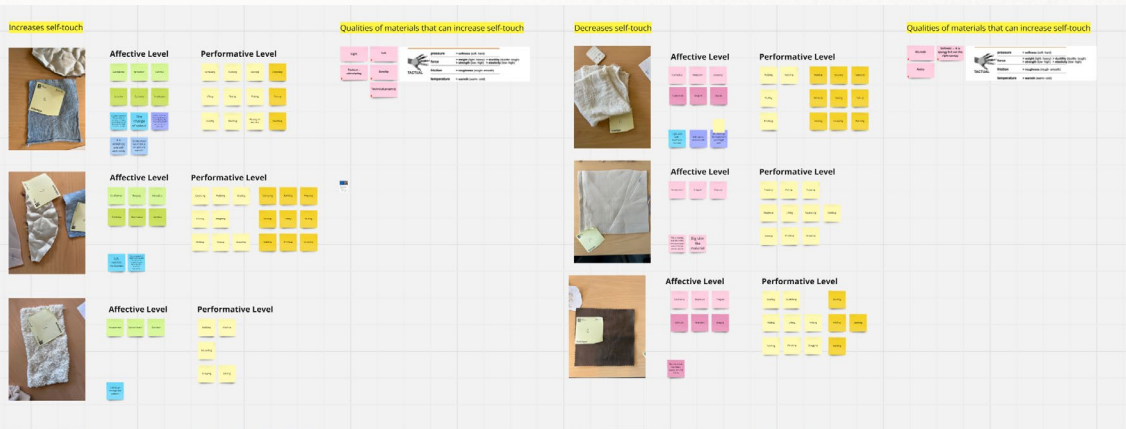
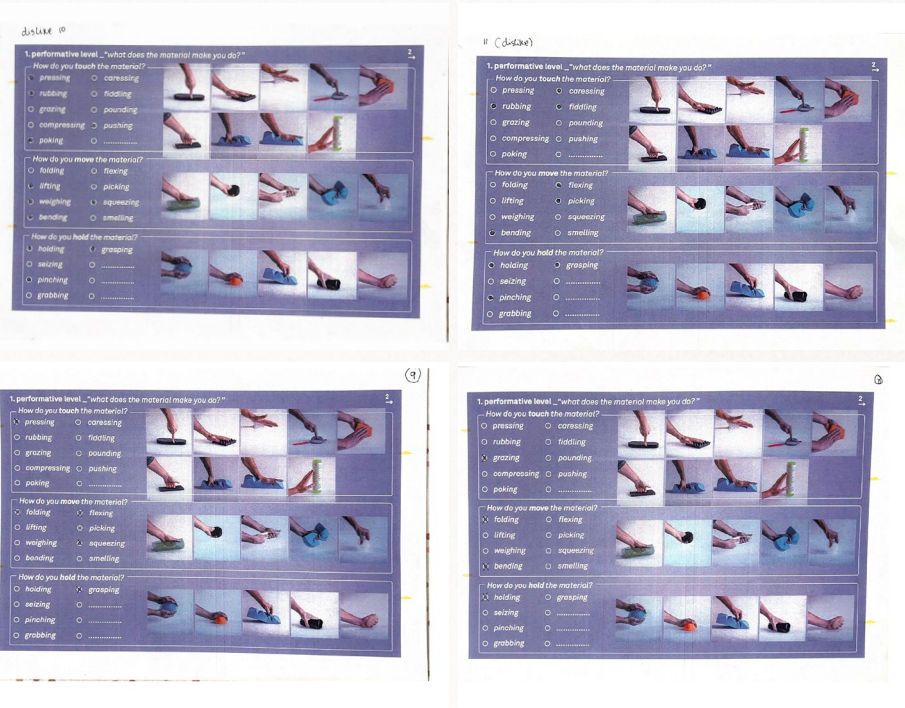
I like the feeling of my hands touching the bark of the balcony.

I thought a lot about the sun touching my skin and how this feeling alone was.

D

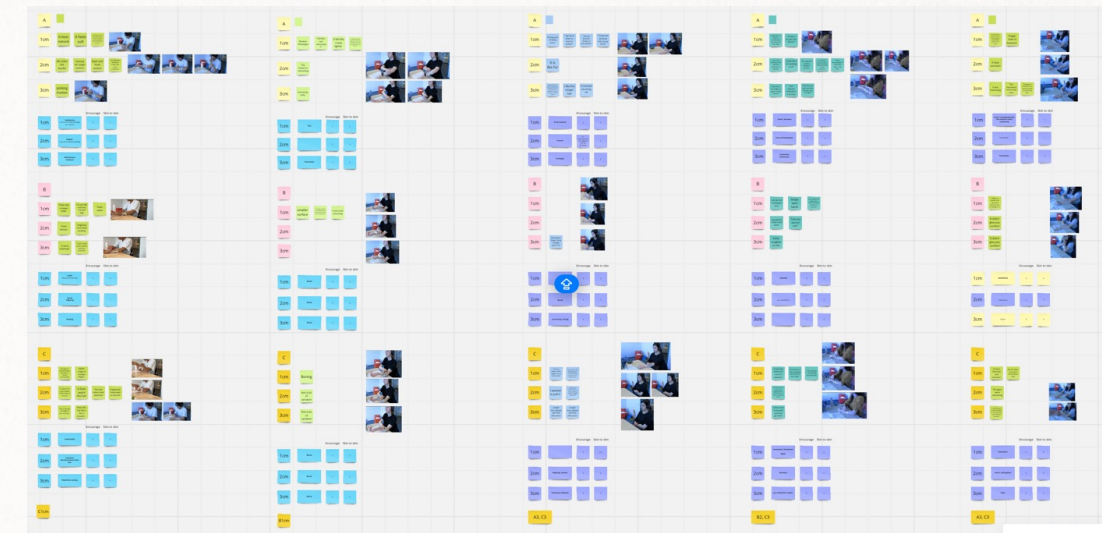
Qualities of Textile Enhancing Self-Touch Experience

Affective and Performative Level



E

Qualitative Analysis



F

Excel Sheet with Data

Prototype							
Question 1						Q1	
11	4	2	4	2	3	15	3
12	2	3	3	2	0	10	2
13	2	2	4	3	3	14	2,8
31	5	4	3	3	5	20	4
32	1	3	3	4	3	14	2,8
33	1	3	4	2	4	14	2,8
11	4	2	4	4	3	17	3,4
12	2	2	3	3	3	13	2,6
13	3	2	4	4	4	17	3,4
Question 2						Q2	
11	2	2	3	3	1	11	2,2
12	3	2	3	2	0	10	2
13	2	3	4	2	4	15	3
31	4	3	4	4	3	18	3,6
32	1	2	3	4	4	14	2,8
33	1	2	4	3	4	14	2,8
11	2	3	4	5	4	18	3,6
12	4	2	3	3	4	16	3,2
13	5	2	4	4	3	18	3,6

G

MATLAB Scatter Graph Code

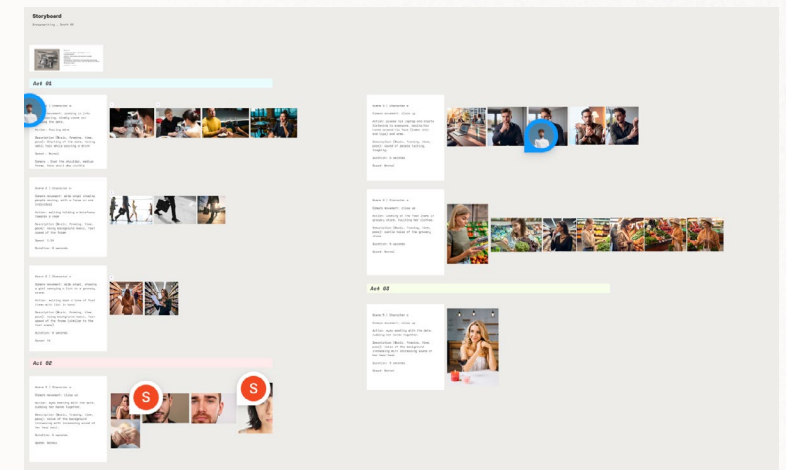
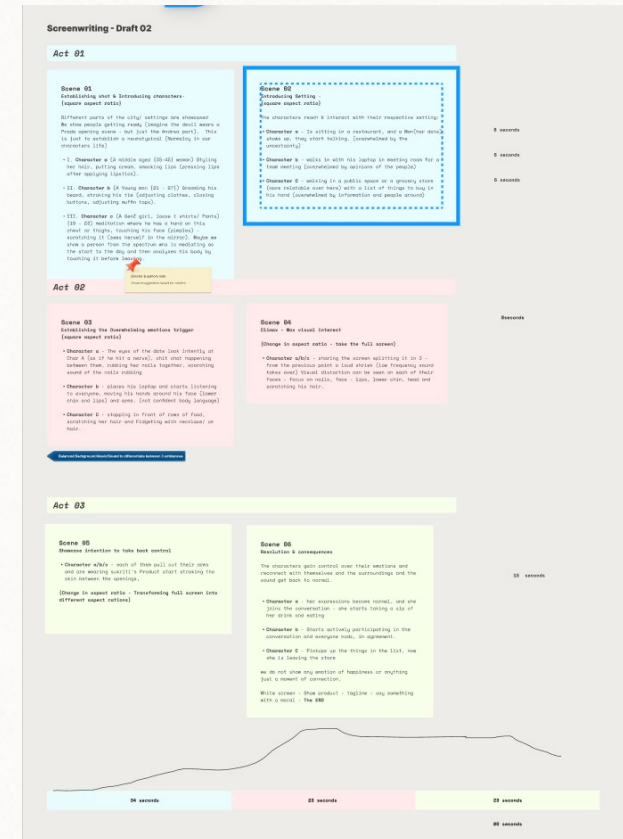
```
A1=3;
A2=2;
A3=2.8;
B1=4;
B2=2.8;
B3=2.8;
C1=3.4;
C2=2.6;
C3=3.4;
```

```
a1=2.2;
a2=2;
a3=3;
b1=3.6;
b2=2.8;
b3=2.8;
c1=3.6;
c2=3.2;
c3=3.6;
```

```
figure
hold on
scatter(a1,A1,'filled')
scatter(a2,A2,'filled')
scatter(a3,A3,'filled')
scatter(b1,B1,'filled')
scatter(b2,B2,'filled')
scatter(b3,B3,'filled')
scatter(c1,C1,'filled')
scatter(c2,C2,'filled')
scatter(c3,C3,'filled')
hold off
legend('A1','A2','A3','B1','B2','B3','C1','C2','C3')
xlim([0 5])
ylim([0 5])
xlabel('Enhances Self Touch')
ylabel('Encourages Self Touch')
title('Correlation between encourage and enhance parameters tested')
```

H

Video Ideation and Storyboarding



I

Approved Project Brief

In this document the agreements made between student and supervisory team about the student's IDE Master Graduation Project are set out. This document may also include involvement of an external client, however does not cover any legal matters student and client (might) agree upon. Next to that, this document facilitates the required procedural checks:

- Student defines the team, what the student is going to do/deliver and how that will come about
- Chair of the supervisory team signs, to formally approve the project's setup / Project brief
- SSC E&SA (Shared Service Centre, Education & Student Affairs) report on the student's registration and study progress
- IDE's Board of Examiners confirms the proposed supervisory team on their eligibility, and whether the student is allowed to start the Graduation Project

STUDENT DATA & MASTER PROGRAMME
Complete all fields and indicate which master(s) you are in

Family nameGarg

InitialsS

Given nameSukriti

Student number5780381

IDE master(s) IPD☐ Dfi☒ SPD☐

2nd non-IDE master

Individual programme (date of approval)

Medisign☐

HPM☐

SUPERVISORY TEAM
Fill in the required information of supervisory team members. If applicable, company mentor is added as 2nd mentor

ChairGijs Huismandept./sectionHCD

mentorStefano Parisidept./sectionSDE

2nd mentor

client:

city:country:

optional comments

Ensure a heterogeneous team. In case you wish to include team members from the same section, explain why.

Chair should request the IDE Board of Examiners for approval when a non-IDE mentor is proposed. Include CV and motivation letter.

2nd mentor only applies when a client is involved.

APPROVAL OF CHAIR on PROJECT PROPOSAL / PROJECT BRIEF -> to be filled in by the Chair of the supervisory team

Sign for approval (Chair)

NameGijs

Date28/02/202

Signature

CHECK ON STUDY PROGRESS
To be filled in by SSC E&SA (Shared Service Centre, Education & Student Affairs), after approval of the project brief by the chair. The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in totalEC

Of which, taking conditional requirements into account, can be part of the exam programmeEC

XYESall 1st year master courses passed

NONOmissing 1st year courses

Comments:

Sign for approval (SSC E&SA)

NameRobin den Braber

Date27-03-2024

SignatureRdB

APPROVAL OF BOARD OF EXAMINERS IDE on SUPERVISORY TEAM -> to be checked and filled in by IDE's Board of Examiners

Does the composition of the Supervisory Team comply with regulations?

YESVSupervisory Team approved

NONOSupervisory Team not approved

Comments:

Based on study progress, students is ...

VALLOWED to start the graduation project

NOT allowed to start the graduation project

Comments:

Sign for approval (BoEx)

MASTER THESIS | SUKRITI GARG

13

Name student **Sukriti Garg**

Student number **5,780,381**

PROJECT TITLE, INTRODUCTION, PROBLEM DEFINITION and ASSIGNMENT

Complete all fields, keep information clear, specific and concise

Project title Enhancing well-being: Exploring the impact of self-touch via wearable materials.

Please state the title of your graduation project (above). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

Introduction

Describe the context of your project here; What is the domain in which your project takes place? Who are the main stakeholders and what interests are at stake? Describe the opportunities (and limitations) in this domain to better serve the stakeholder interests. (max 250 words)

This project takes place within the context of redefining and exploring the potential of self-touch, a concept often misconstrued with self-enjoyment. In actuality, self-touch transcends traditional perceptions, serving as a multifaceted extension of cognition and a unique form of communication with both ourselves and others. This understanding positions self-touch as an integral part of body ownership and presents a potential for well-being.

The recent study by Dreisoerner et al. (2021) highlights how self-soothing touch can lead to decreased cortisol levels after encountering stressors, showcasing its potential to enhance resilience against stress. This suggests that self-touch can be a simple yet effective way to cope with stress, especially in situations where external touch might not be available or might feel unsafe. Although this study didn't find significant differences in heart rates or self-reported stress levels, it emphasizes on the therapeutic value of self-touch.

Additionally, innovation practices like self-FI(Functional Intergration) utilize self-touch to directly sense body movements, improving body organization and promoting ease. These findings suggest that self-touch isn't just solitary action; it has the potential to serve as a preventative tool with various applications.

All in all through the medium of wearable materials, there's an opportunity to view self-touch in a new light- as a means of relaxation and self-communication in social setting.

Dreisoerner, A., Junker, N. M., Schlotz, W., Heimrich, J., Bloemeke, S., Ditzen, B., & van Dick, R. (2021). Self-soothing touch and being hugged reduce cortisol responses to stress: A randomized controlled trial on stress, physical touch, and social identity. Comprehensive Psychoneuroendocrinology, 8, 100091. <https://doi.org/10.1016/j.cpnec.2021.100091>

→ space available for images / figures on next page

Problem Definition

What problem do you want to solve in the context described in the introduction, and within the available time frame of 100 working days? (= Master Graduation Project of 30 EC). What opportunities do you see to create added value for the described stakeholders? Substantiate your choice. (max 200 words)

Self-touch being one of the first senses to develop is fundamental to human behavior. Despite its perceived healing properties, there's not enough scientific evidence to support its effectiveness. I believe it's important to remind people, the value of being aware of their bodies without making it too hard. Current practices often feel separate from daily life and need intentional effort to fully experience self-touch.

For this project, I aim to seamlessly integrate self-touch into daily routines using Elvin Karana's Materials-to-Experiences framework. This framework explores how materials are perceived experientially, delving into people's thoughts, feelings, and actions. I see a parallel between self-touch and materials, both of which are not fully understood. The framework's affective and performative levels also align to self-touch, as they involve how individuals feel and interact with materials. In the project, I will narrow down the target group through contextual research. Balancing the authenticity and simplicity of self-touch with the experiential properties of materials may pose a challenge. It aims to tackle the lack of understanding regarding the practical applications of self-touch in daily routines and explore its potential for the future.

Assignment

This is the most important part of the project brief because it will give a clear direction of what you are heading for. Formulate an assignment to yourself regarding what you expect to deliver as result at the end of your project. (1 sentence) As you graduate as an industrial design engineer, your assignment will start with a verb (Design/Investigate/Validate/Create), and you may use the green text format:

Exploring self-touch through material-driven design to promote well-being.

Then explain your project approach to carrying out your graduation project and what research and design methods you plan to use to generate your design solution (max 150 words)

For my graduation project, I aim to deepen my understanding of self-touch through material-driven design. Beginning with a thorough literature review, I will delve into the concept of self-touch. Subsequently, I'll conduct experiments to test and refine my comprehension of materials. Given the complexity of the subject, I'll adopt an iterative methodology, continuously alternating between research and experimentation, employing a research-through-design approach. This will involve a mixed-methods research methodology, including surveys, interviews, and experiential user tests with materials. Rapid prototyping will be essential for swiftly testing and refining design decisions. This cyclical process will inform the design phase, ensuring a comprehensive understanding before developing the final product. My objective is to create a tangible solution that promotes well-being through self-touch in social settings.

Project planning and key moments

To make visible how you plan to spend your time, you must make a planning for the full project. You are advised to use a Gantt chart format to show the different phases of your project, deliverables you have in mind, meetings and in-between deadlines. Keep in mind that all activities should fit within the given run time of 100 working days. Your planning should include a **kick-off meeting, mid-term evaluation meeting, green light meeting and graduation ceremony**. Please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any (for instance because of holidays or parallel course activities).

Make sure to attach the full plan to this project brief.
The four key moment dates must be filled in below

Kick off meeting28 Feb 2024

Mid-term evaluation8 May 2024

Green light meeting17 Jul 2024

Graduation ceremony12 Aug 2024

In exceptional cases (part of) the Graduation Project may need to be scheduled part-time. Indicate here if such applies to your project

Part of project scheduled part-time	
For how many project weeks	
Number of project days per week	

Comments:

Motivation and personal ambitions

Explain why you wish to start this project, what competencies you want to prove or develop (e.g. competencies acquired in your MSc programme, electives, extra-curricular activities or other).

Optionally, describe whether you have some personal learning ambitions which you explicitly want to address in this project, on top of the learning objectives of the Graduation Project itself. You might think of e.g. acquiring in depth knowledge on a specific subject, broadening your competencies or experimenting with a specific tool or methodology. Personal learning ambitions are limited to a maximum number of five.
(200 words max)

As a designer, I'm inspired by everyday experiences, and the idea of self-touch struck a chord with me because I experienced it to go beyond just individual moments. Exploring human behavior and philosophy has always fascinated me, especially after taking lectures in PUUE and the elective of introspective design. They encouraged me to think about design outside the methodologies, through the lens of self-awareness. This project mirrors my personal values of authenticity, connection to nature, and well-being, whether through rituals like worship or activities like yoga. Apart from this, the elective courses I've taken over the past year and a half have equipped me with valuable research methodologies. My inspiration for this project stems from my exploration of speculation design, while my research skills were honed through intensive research electives. However, I recognize areas where I want to grow personally and professionally. I aim to enhance my hands-on skills and overcome the fear of materializing my ideas. Through engaging with different materials, I believe I can better execute my concepts. Developing a distinct voice as a designer is crucial to me. I see philosophy as a tool to broaden perspectives and provoke thoughtful discussions. Through this project, I aspire to develop my own unique viewpoint and become more confident in questioning the world around me. I've often grappled with distinguishing between art and design, as my inspirations don't always lead to tangible products. With this project, I hope to bridge that gap by expressing myself as a designer who can translate personal experiences into meaningful products, services, or experiences for others. Ultimately, this project is a reflection of my values, emphasizing well-being and nature as central themes in both my personal and professional life.