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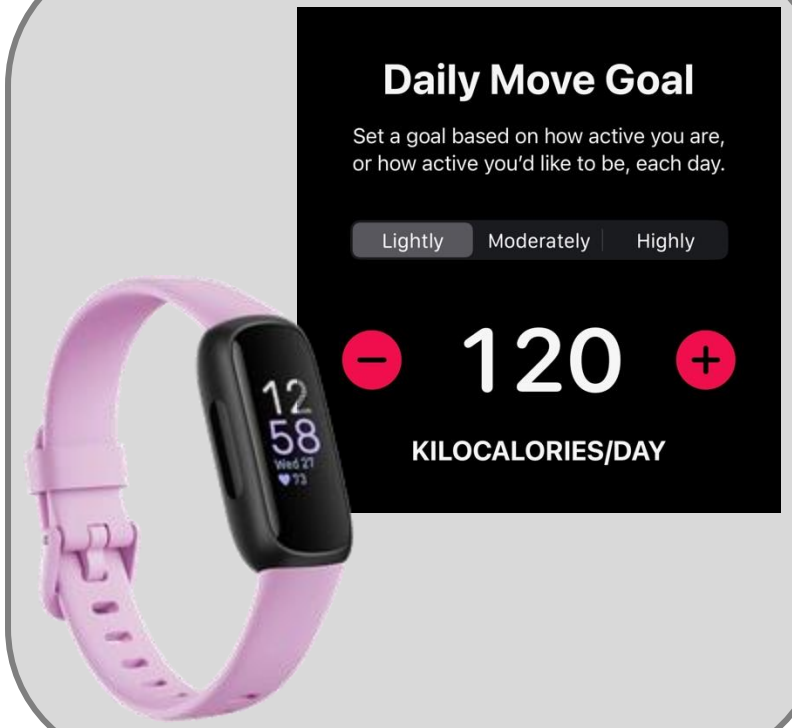
INTIMATE COMPUTING: TOWARDS A CARING AND INSPIRING DIGITAL SOCIETY

SYMPOSIUM DECEMBER 11TH 2024 - BLURRING THE BOUNDARIES: REFLECTING ON ARTISTIC-LED RESEARCH ON DESIGNING HUMAN-TECHNOLOGY ENTANGLEMENTS

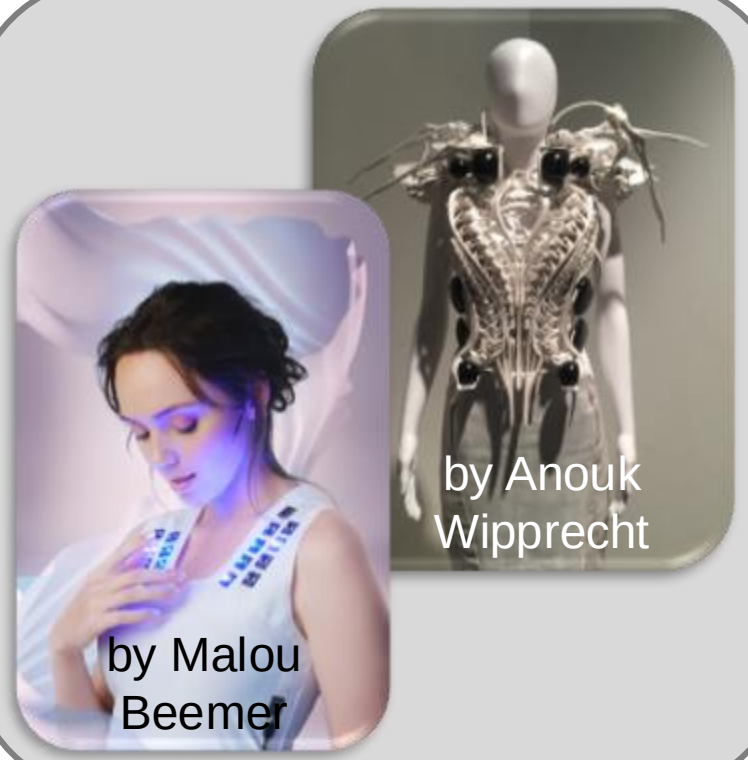
M. BIRNA VAN RIEMSDIJK

Digital technologies are becoming intimately interwoven into our daily lives

Social Media



Health & Fitness Apps



High-tech Garments

Intimate Technologies

Digital technologies that collect and respond to people based on highly personal data

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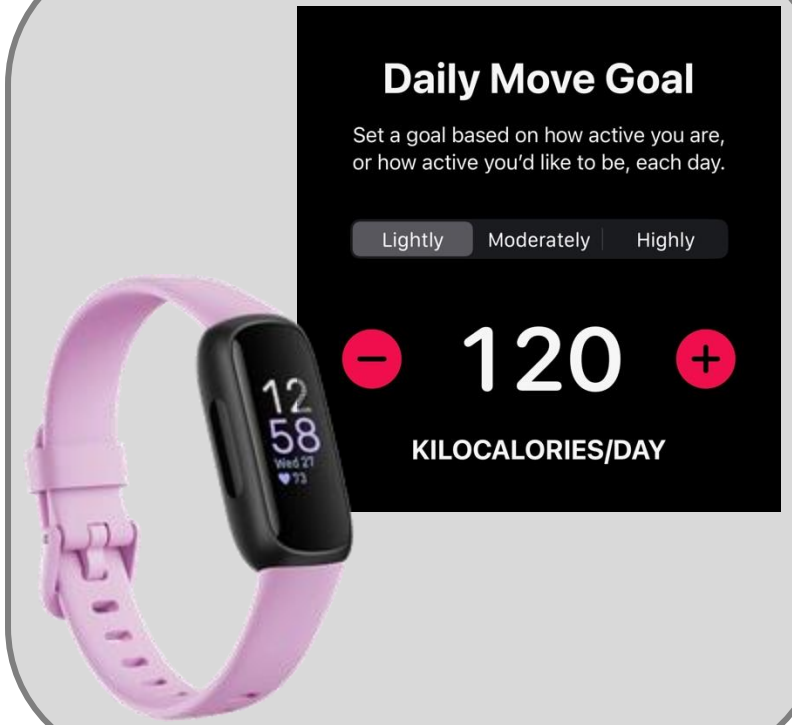
Personal & ‘Agentic’

(reactive and proactive)

Intimate Technologies have potential benefits for enhancing and supporting us



Enjoyment

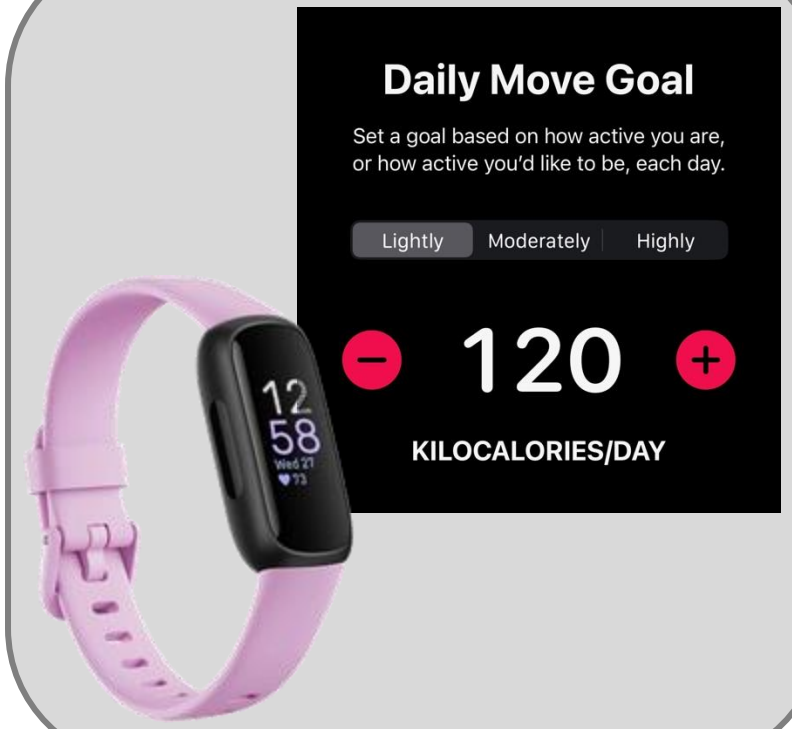
Health

Social connection

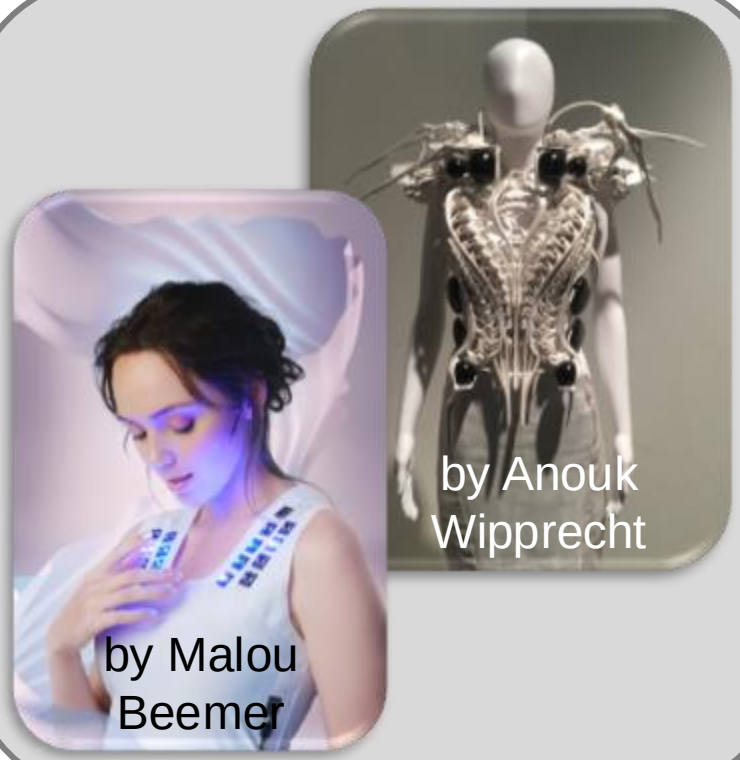
But Intimate Technologies can also affect us in undesired ways: new personal vulnerabilities

Meta

Triggering content



Misaligned advice



Disrupted interactions

Intimate Computing

study how to shape the interwovenness been people and Intimate Technologies in a way that both aligns with people's personal values *and* accounts for their personal vulnerabilities

So that we create Intimate Technologies that foster a caring and inspiring digital society!

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1. **Aim of Intimate Computing**
2. **Key Concepts in Intimate Computing**
3. **Dancing with Intimate Technologies**

1. AIM OF INTIMATE COMPUTING

What would you like to have achieved with your Intimate Computing research 10 years from now?

Safe

Warm

Embrace

Sensual

Soft

Sheltered

Tender

Close & Intimate

Move with you

Part of you

Flexible

I would like our Intimate Technologies to feel like wearing a comfortable sweater!

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“but if the technology is fully adaptive, it doesn’t really do anything?!”

Intimate Technology should also spark something!

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Intimate Computing

What are the underlying design and computational principles for creating Intimate Technologies that foster a caring and inspiring digital society?

2. KEY CONCEPTS IN INTIMATE COMPUTING

PERSONAL VALUES AND VULNERABILITIES

Personal values

- Value = “what a person considers important in life” (Friedman et al.)
- abstract motivations for action (Schwartz)
- self-direction, friendship, comfort, achievement, inclusion, …
- related concepts: norms, goals, preferences, habits, …

Personal vulnerabilities

- Human vulnerability = “capability to be hurt” (Coeckelbergh, 2013)
  - arises from standing in relation to the world, openness to the world, and engagement with the world
  - not passive feature, we *make* ourselves vulnerable through the actions we choose
- Physical, psychological, social
  - capability to be affected

PERSONAL VALUES AND VULNERABILITIES

Personal values

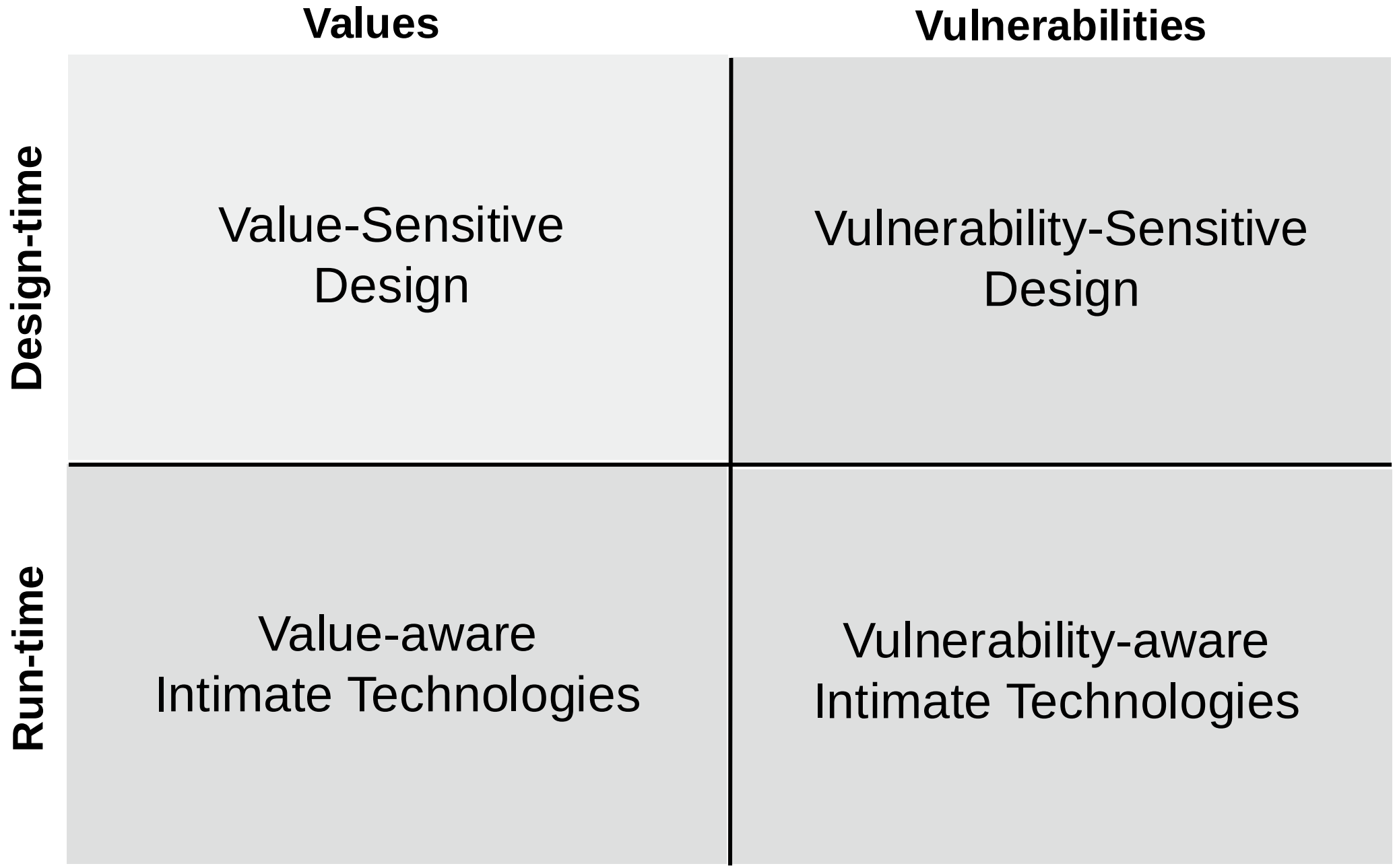
Value-awareness: knowing where to move, sense of direction, purpose and inspiration, self reflection

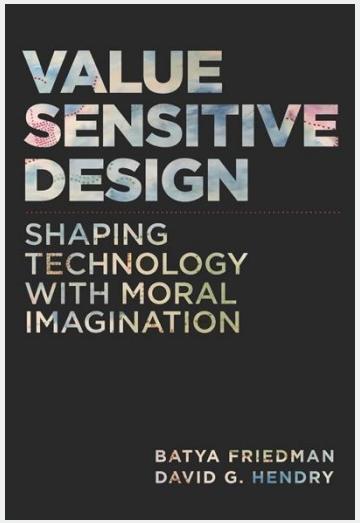
Personal vulnerabilities

Vulnerability-awareness: regulate our openness to the world, enabling us to take better care of ourselves, each other and the world

How we engage with our personal values and vulnerabilities: expression of personal identity

RQ: How can Intimate Technologies support the expression of personal identity?


Values
Vulnerabilities
Design-time
Run-time
Value-Sensitive Design
Vulnerability-Sensitive Design
Value-aware Intimate Technologies
Vulnerability-aware Intimate Technologies

	Values	Vulnerabilities
Design-time	 (Friedman, Hendry et al.)	(Honauer, Tenn, Sánchez Chamorro, et al.) Vulnerability-Sensitive Design esdit
Run-time	(Kayal, Tielman, Kliess, Kola, Chen, Wolff, et al.) Value-aware Intimate Technologies SAEP COMMIT/ Hybrid Intelligence	(Cheng et al.) Vulnerability-aware Intimate Technologies STRESS IN ACTION Don’t forget the forgotten!

3. DANCING WITH INTIMATE TECHNOLOGIES

FUNDAMENTAL CHALLENGES FOR VALUE- AND VULNERABILITY-AWARE INTIMATE TECHNOLOGIES

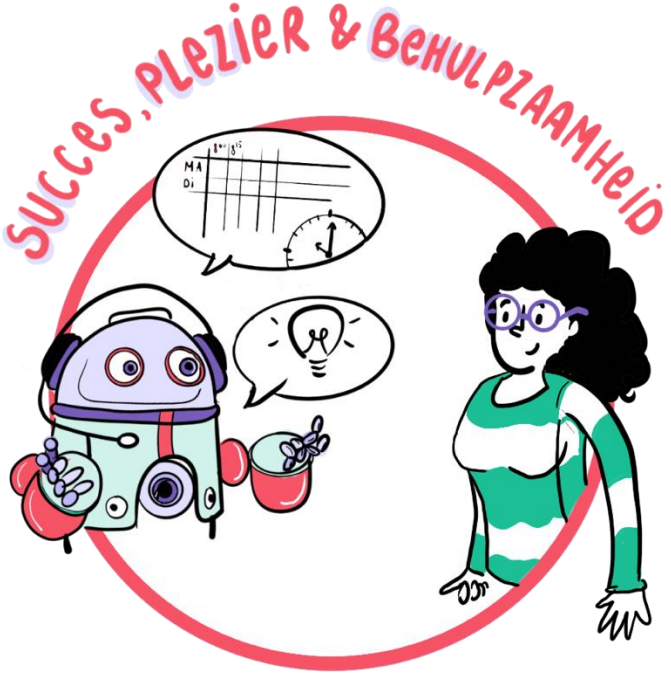
Fundamentally human nature

Tension values & vulnerabilities

Constructive & dynamic nature

NEED FOR HUMAN-TECHNOLOGY PARTNERSHIP

Fundamentally human nature	Human involvement
Constructive & dynamic nature	Continuous change
Tension values & vulnerabilities	Dynamic balance



Human-technology partnership

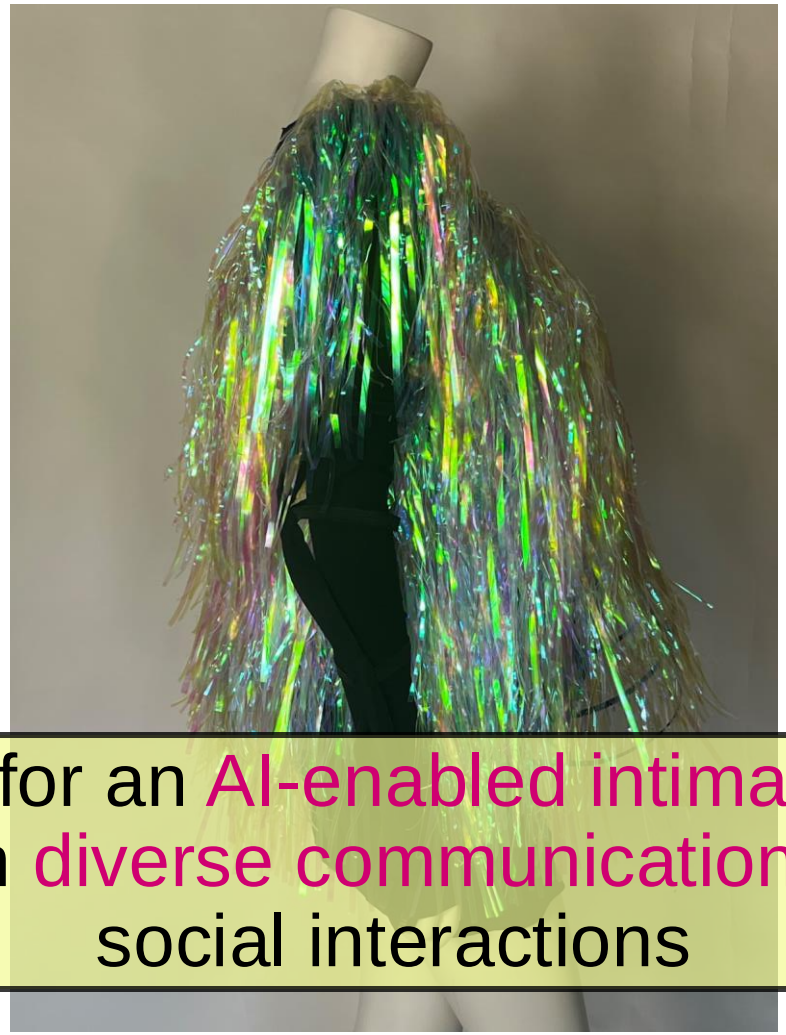
RQ: How can Intimate Technologies support the expression of personal identity through human-technology partnership?

Dance as **metaphor** for human-technology partnership

Designing Intimate Technologies **through Dance**!

Dance performance for connecting about the ideas with others

DISCONNECTIONS AND RELATIONSHIPS MEDIATED THROUGH INTIMATE TECHNOLOGIES



Conceptual prototype for an AI-enabled intimate wearable, aiming to support persons with diverse communication needs in navigating social interactions

SOME FIRST INSIGHTS FROM DESIGNING WITH DANCE

- Importance of multidisciplinary collaboration for Intimate Computing
- Centring embodiment
  - Human vulnerability rooted in embodiment
  - Embodiment of the technology
  - Different human embodiment as potential challenge for connection
- Use of ‘tuning in’ techniques (mirroring and following) as ways of trying to connect

SUMMARY

- The aim of Intimate Computing is to investigate design and computational principles required for creating Intimate Technologies that foster a caring and inspiring digital society.
- This means that Intimate Technologies should support the expression of personal identity which we aim to realize through designing and computing with personal values and vulnerabilities.
- Models for computing with values and vulnerabilities should enable dynamic human-technology partnership which might be shaped as a ‘dance’ with Intimate Technology.

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Disconnections and Relationships mediated through Intimate Technologies (DiscReTe) project

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Creative Technologist (Software + Hardware): Emil Felix Jari Philogène Gravier
Initial Technological Support: Jonas Hentschel
Choreographic Work: Laisvie Andrea Ochoa Gaevska
Performers: Laisvie Andrea Ochoa Gaevska and Dennis Massar from ConCuerpos inclusive dance company
Event Organizer: Melina Petersen
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Intimate Computing? Let’s dance!

https://intimate-computing.net

Value-aware
personal agents

Computing with
Vulnerability