



From small-scale generative images to global picture of HCI

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MBZUAI Research Talk, Nov 3, 2025



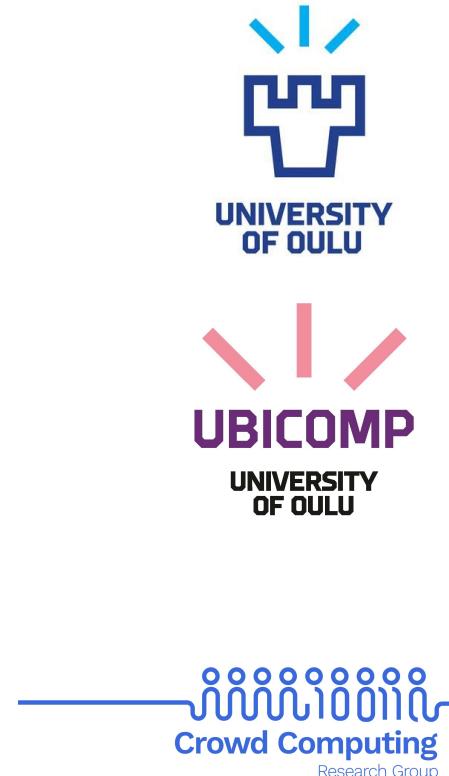
prompt: "elongated surreal synchronized elongated legs"

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Generative AI, Creativity, and “Meta-HCI”

Ph.D. (2021), Human–Computer
Interaction, University of Oulu

M.Sc., (2015) Computer Science,
University of Southampton



2018–2021

Creative Crowdsourcing / Creativity Support Systems



Workers

A screenshot of the Amazon Mechanical Turk interface. The top navigation bar includes 'Dashboard', 'Qualifications', and 'Search for HITs'. The main area shows a list of HITs with columns for 'Header', 'Title', 'Description', 'Bids', 'Status', and 'Actions'. The list includes various tasks such as 'Evaluate image tags (MEDIUM)', 'Find Additional Contact Information', 'Collect Data from Household', 'Find the name of CTO or other terms in the file in a plain text document', '1 minute survey - service preference', and 'Research Original Setting Pricing (Pilot) for Designer Items'. The status column indicates tasks like 'Accepted A Task' and 'Pending'.

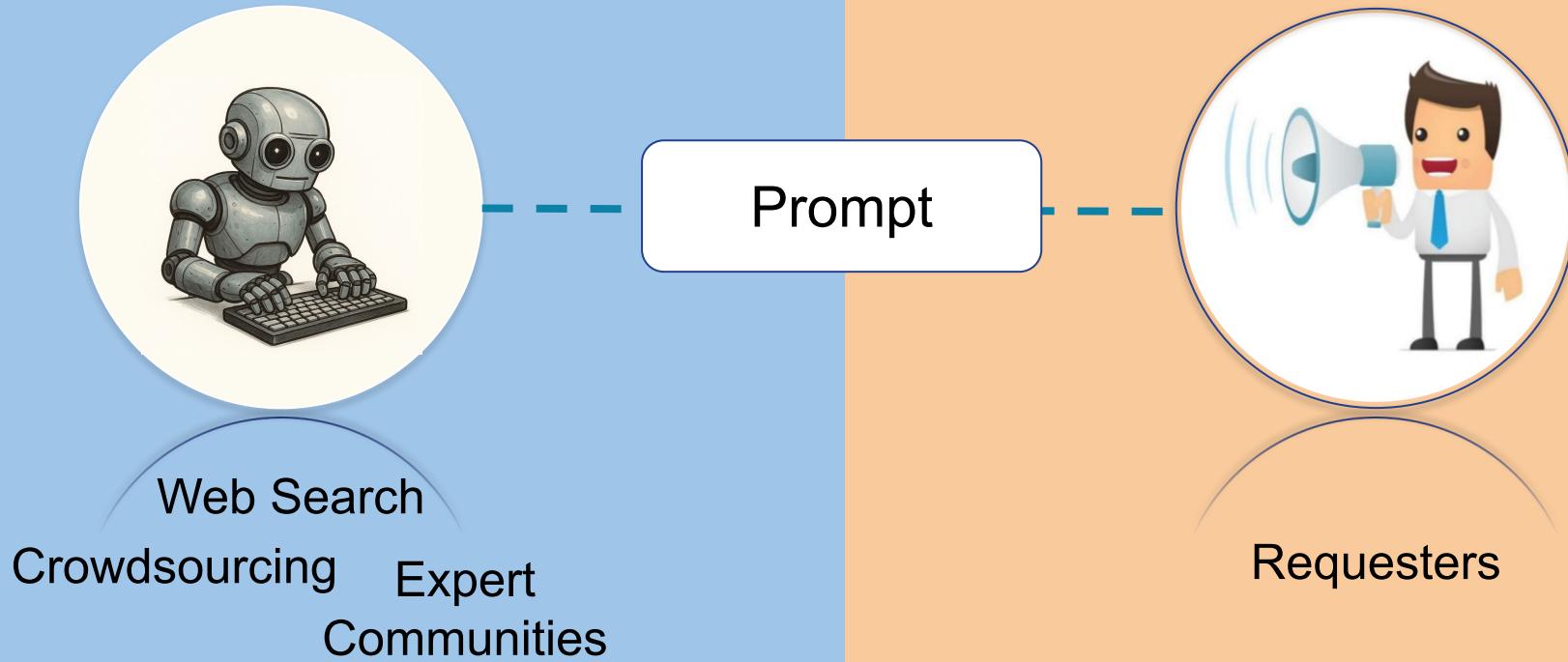
Crowdsourcing
Platform
(e.g., Amazon
Mechanical Turk, Prolific)



Requesters

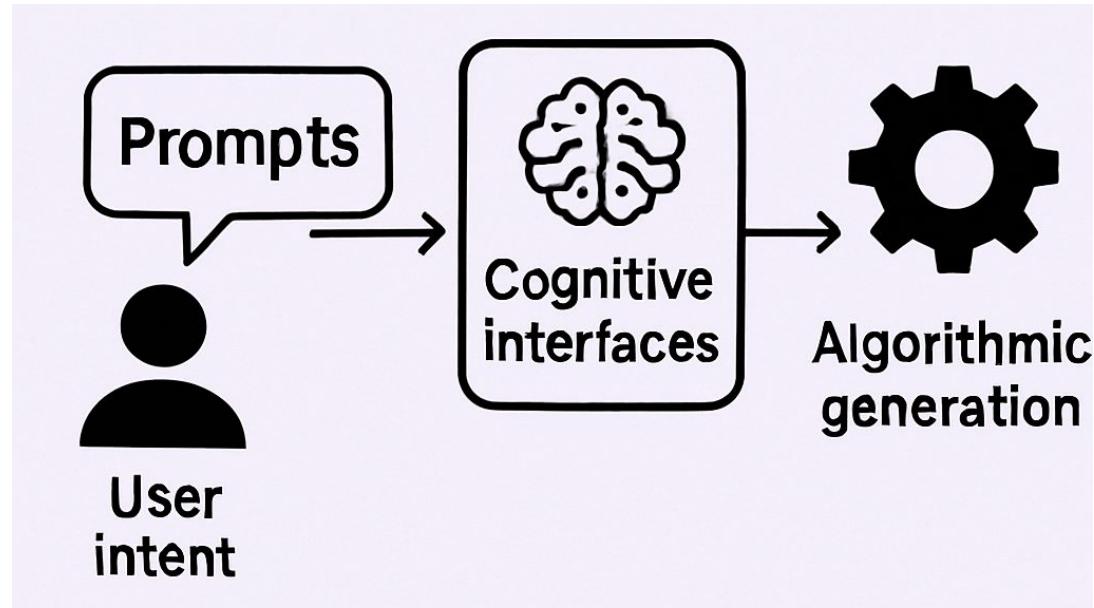
2022-

Generative Artificial Intelligence



Prompts as mediators of intent

“Prompts function as cognitive interfaces that mediate between user intent and algorithmic generation”
(Daalsgard 2025)



2022-

“Prompt Engineering” as a Paradigm Shift

From: Human-Computer Interaction
To: Human-AI Interaction

Experiments with
VQGAN-CLIP



2021

Midjourney
1st-wave Betatester



2022

Understanding Prompting as an End-User Interface

(in TTI generation)

Creativity

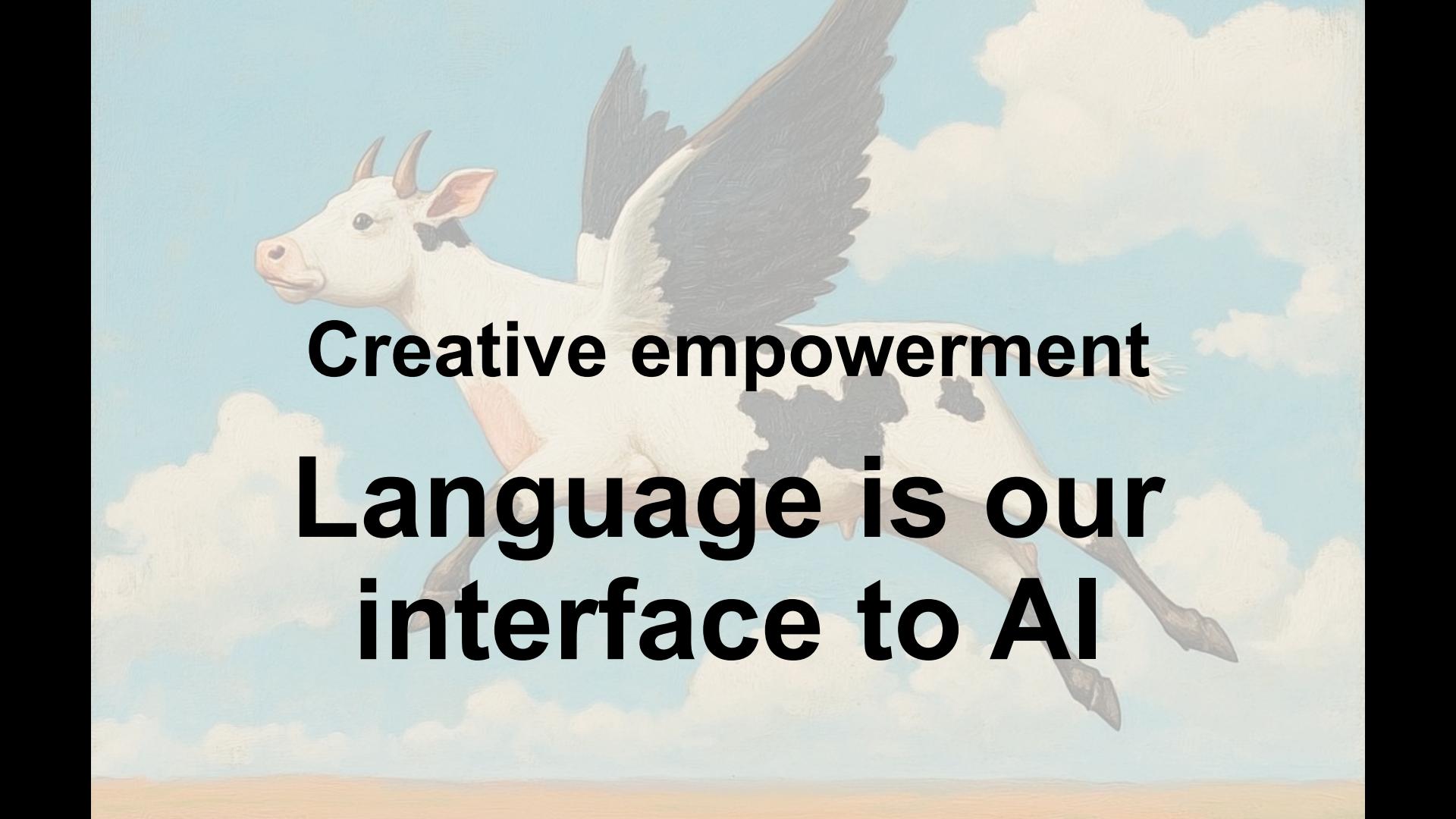
Misalignment

Understanding Prompting as an End-User Interface

(in TTI generation)

Creativity

Misalignment



Creative empowerment

**Language is our
interface to AI**



Creative empowerment?

Language is our

imperfect interface to AI

Creativity

What does it mean to be creative with text-to-image generation?

image generated with Midjourney



prompt: "creativity"



Prompt Engineering

Prompt Design

- Labor-intensive
- Iterative human effort
- Specialized expertise
- Lack of standards

“while some prompts resemble natural language, many of the most ‘successful’ prompts do not”

Meredith Ringel Morris (2024): Prompting Considered Harmful. Communications of the ACM.
<https://doi.org/10.1145/3673861>

The photograph, taken with a Canon EOS and a SIGMA Art Lens 35mm F1.4, is a masterclass in photographic precision, with ISO 200 and a shutter speed of 2000 ensuring every detail is flawlessly rendered.

A completely unrealistic glowing animal sitting on a branch in the forest.

```
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Prompt Engineering

Prompt Example



User @milkytaste, 2024



Prompt Engineering

Taxonomy of Prompt Modifiers for TTI Generation

- **Style modifiers**
 - concept art, oil painting, photorealistic, ...
- **Quality Boosters**
 - high quality, 8k, highly detailed, artstation, ...
- **Repeating terms**
 - spacewhale, a whale in space
- **Magic terms**
 - feel the sound
- **Image prompts**



propaganda poster end digital concept angel octan
pixar Seb McKinnon night plant head brain glowing
Peter Mohrbacher 8k hd beautiful painting look st
hell rendered realistic materials whimsically designed
detailed mattes subsurface scattering 0 4 middle eye
art nouveau demon beautiful ocean yellow gold
character concept space logo sun New York
painting portrait orange mar nature waterco
concept art large mirror cat
green dream god Moebius cute
post processing child white re
concept render Shaun Tan robot
Dan Mumford hyperrealistic photo
huge sky Tony Soprano forest octane 8k
unreal engine pattern plushie chibi
mullin flying fighting house universe earth

Creativity

The 4P of Text-to-Image Generation

Practitioner

Digital image;
prompt

Choice of prompt

Iterative prompt
optimization; editing; tools

Adaption of prompts and
modifiers from other
creators

(Rhodes' 4P of Creativity)

Product:

artifacts = observable
outcome (e.g., poem,
painting, sculpture)

Person:

personality, intellect, habits,
attitudes, ...

Process:

thinking, motivation,
learning, ...

Press:

environment of the creative
individual

Viewer

Digital image;
prompt (only if shared)

n/a

n/a

n/a

Creativity

“Standard” Definition of Creativity

Criteria 1:
Novelty

Criteria 2:
Usefulness / Apropriateness / Value

Runco and Jaeger (2012): The Standard Definition of Creativity.
Creativity Research Journal, 24(1), 92-96, Taylor & Francis.
<https://doi.org/10.1080/10400419.2012.650092>



Prompt: “elongated surreal synchronized elongated legs” 16

Edge Case 1: Non-creative image generation?

- (1) Music lyrics
- (2) Random snippets of text
- (3) Single characters & emojis

Edge Case 2: Innovative image generation?

Highly creative practitioners seek to innovate by writing novel prompts that deviate from past prompts

Prompt: "invalid cell in the valid world"



Creativity

Image Generation Experiments

→ Mode Collapse



Creativity

Mode Collapse on Midjourney

Tagalog



(child)

(fire)



bata

seed 123456 v 6.1 stylize 0



apoy

seed 123456 v 6.1 stylize 0

Creativity

Default Image Prompts

Unique Names: *Nuoka Zuberi, Shelan Creswell, Soraya Lonescu, ...*

URLs: www.amazon.com,
www.bing.com, www.chatgpt.com, ...

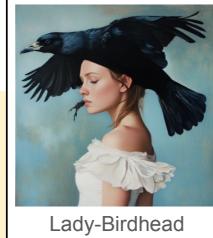
Finnish: *maito, kinkku, suola, ...*

Tagalog: *apoy, bata, pagpag, ...*

Glitch Tokens: *Rawdownload, PsyNetMessage, ...*

Corrupted Words: *Greagoft, Shuttastfr, Shuttagolt, ...*

Abbreviations: *bcd, gsod, dqae, ...*



Lady-Birdhead



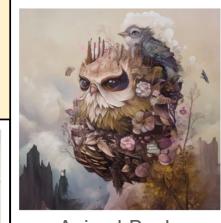
Floating-Head



Psychedelic-Eye



Growth-Face



Animal-Bush



Eagle-Circle



Standing-Lady



Fantasy-Castle



Mirror-Lady



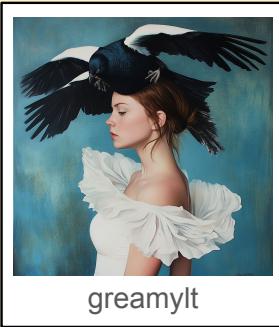
Headpiece-Lady

Creativity

Lady Birdhead



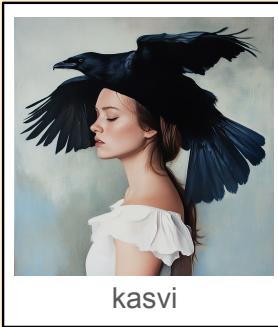
bcd



greamylt



greawarz



kasvi



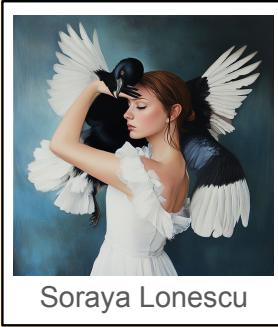
kinkku



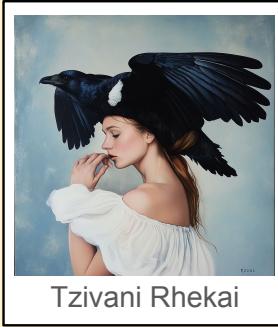
suola



Shelan Creswell



Soraya Lonescu



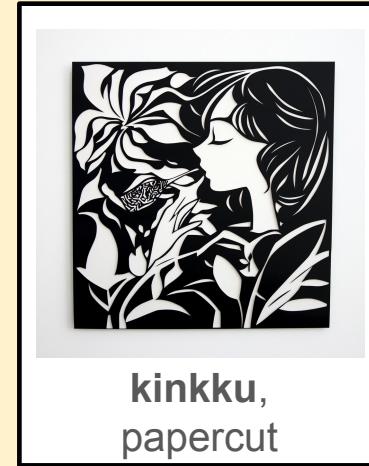
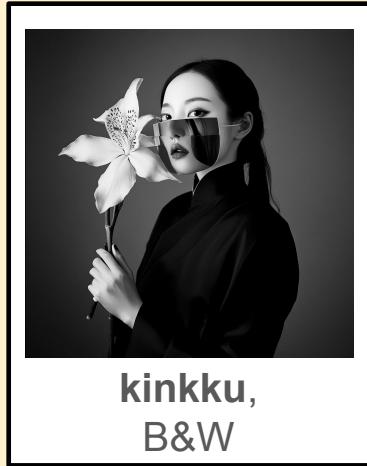
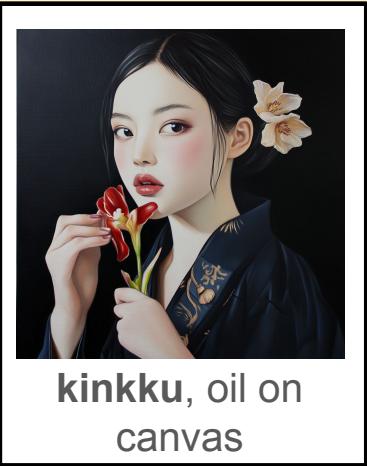
Tzivani Rhekai



www.tumblr.com

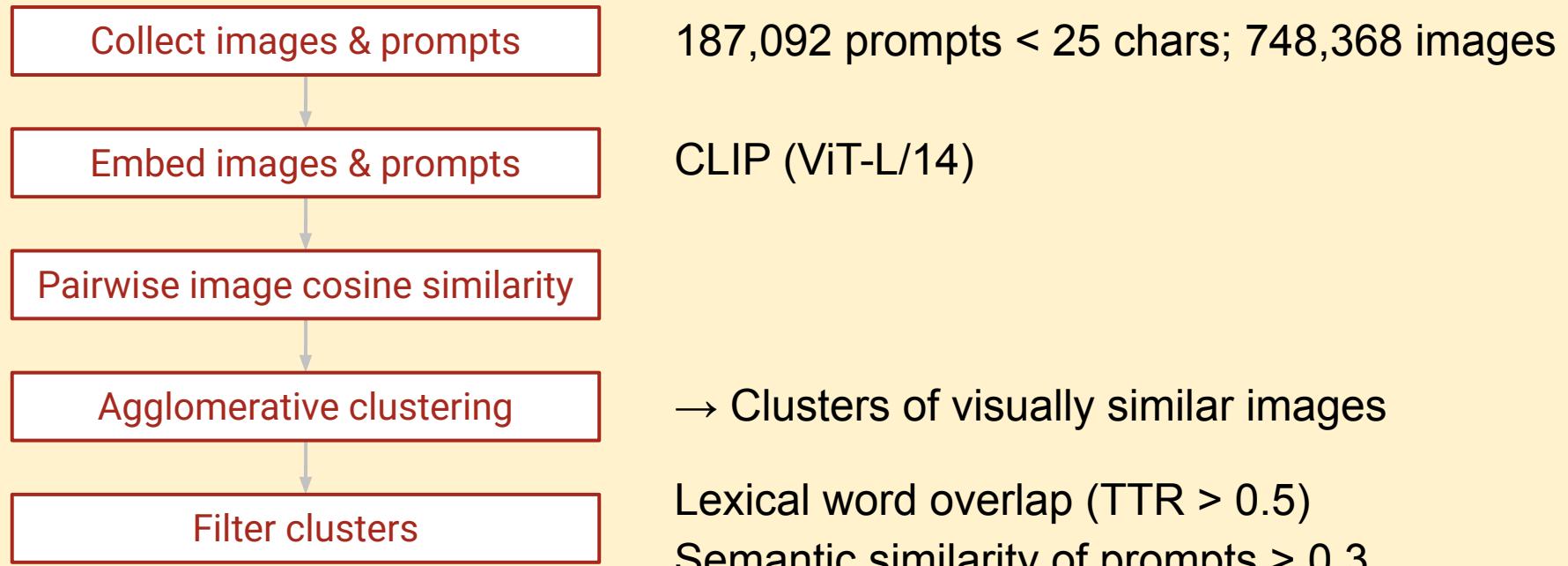
Creativity

Default image concepts behave like normal concepts



Creativity

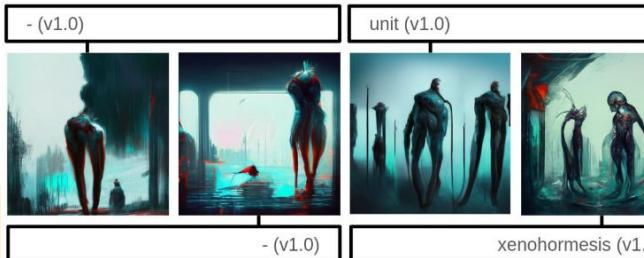
Identifying Default Images on Midjourney



Creativity

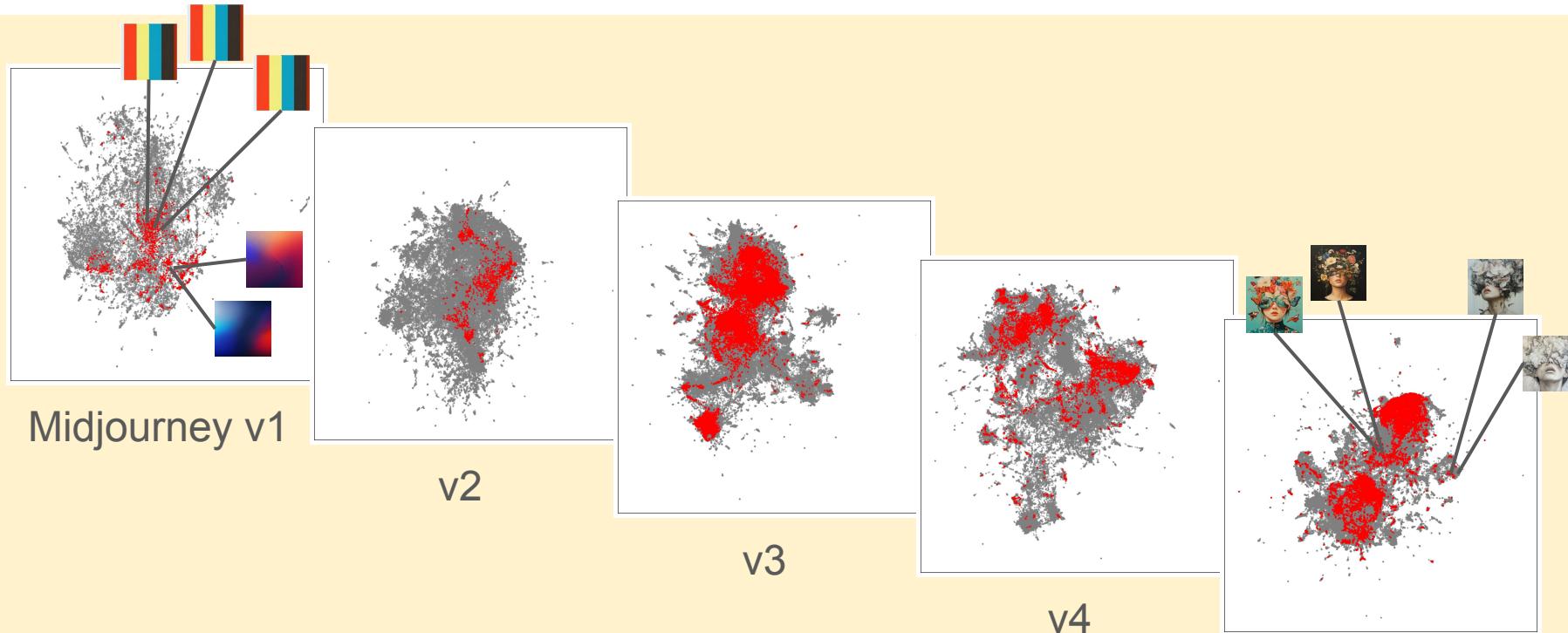
Identifying Default Images on Midjourney

Result:
4.8% potential
default images
(in dataset)



Creativity

Identifying Default Images on Midjourney



Hannu Simonen, Atte Kiviniemi, Hannah Johnston, Helena Barranha, and Jonas Oppenlaender (2025):
An Exploration of Default Images in Text-to-Image Generation. <https://arxiv.org/abs/2505.09166>

Creativity

Innovative Image Generation?

- Default images can stop, but also derail the creative process
- Highly creative practitioners are “punished” with default images
- Frustration, a sense of lost control over the creative process
- Undermines user trust, agency, perceived accuracy and, usability



prompt: “*modernika*”

Social Creativity

Challenges of Text-to-Image Generation in Public Spaces

C1: Individual use

C2: Limited control

C3: Language barrier

C4: Low engagement



Social Creativity

“Bodyprompting”

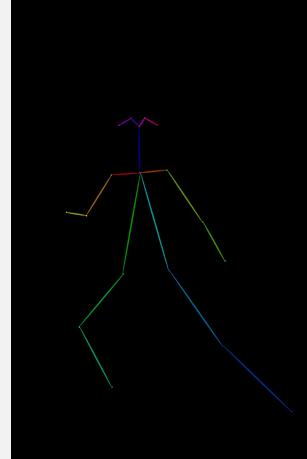
Source artwork



User



Pose

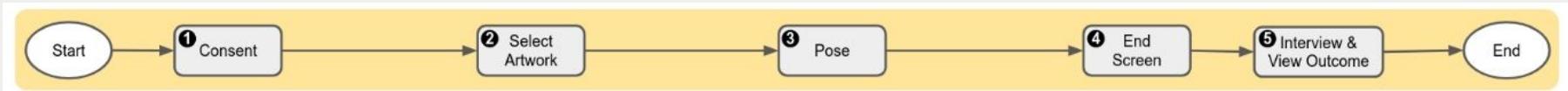


Output



Jonas Oppenlaender, Hannah Johnston, Johanna Silvennoinen, and Helena Barranha (2025): Artworks Reimagined: Exploring Human-AI Co-Creation through Body Prompting. In Proc. ACM Hum.-Comput. Interact. (PACM-EICS). <https://dx.doi.org/10.1145/3734189>

Study Procedure

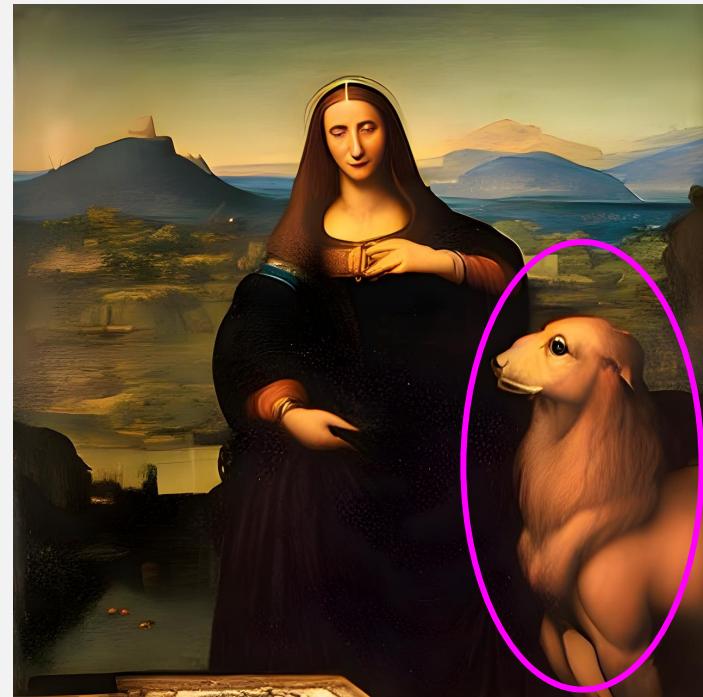
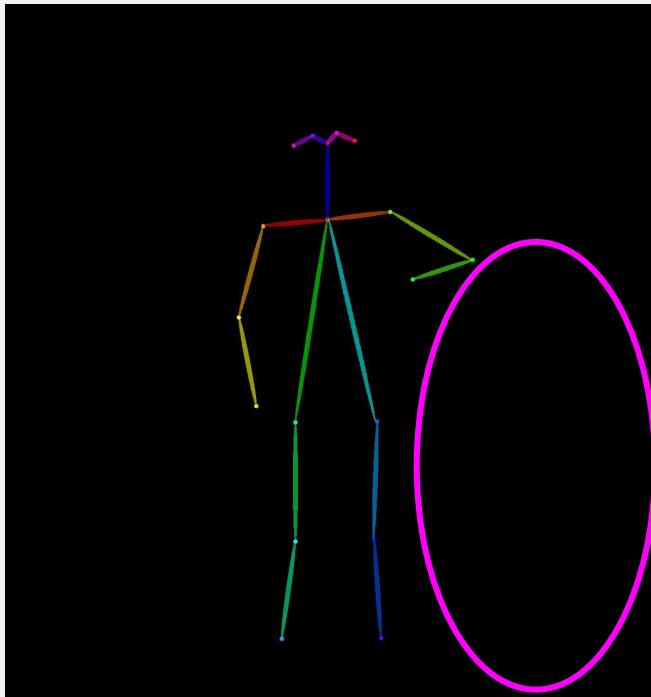


172 images; 6 hours; 79 interviews (~37 years, max 68 years)

44 group images (56%), 35 individual participants (44%)

Engaging & “fun” experience

AI Hallucinations



AI Hallucinations

Location of hallu- cination	Narrative change	Example	Hallucination	Frequency	Description

Understanding Prompting as an End-User Interface

(in TTI generation)

Creativity

Misalignment

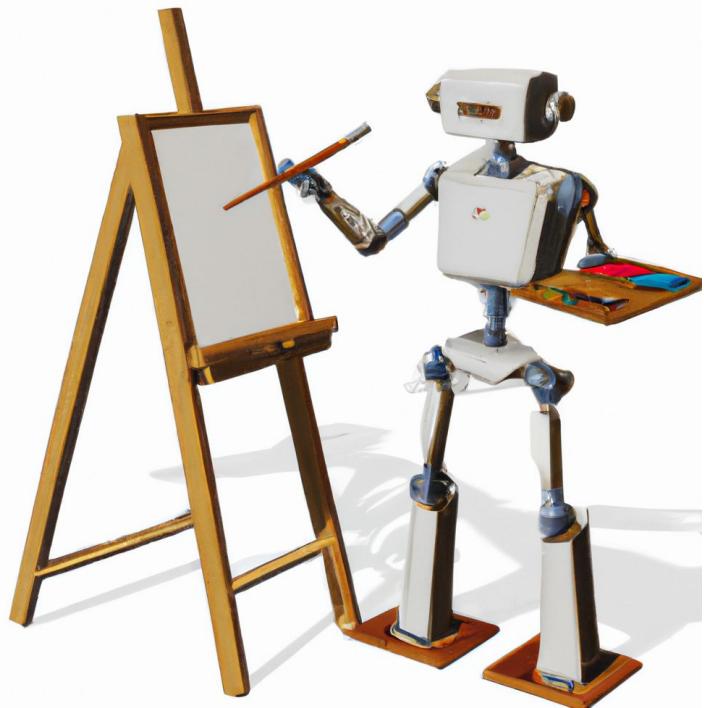
**“Prompt engineering”
as a symptom
of misalignment**

Misalignment

Randomness of first generated image

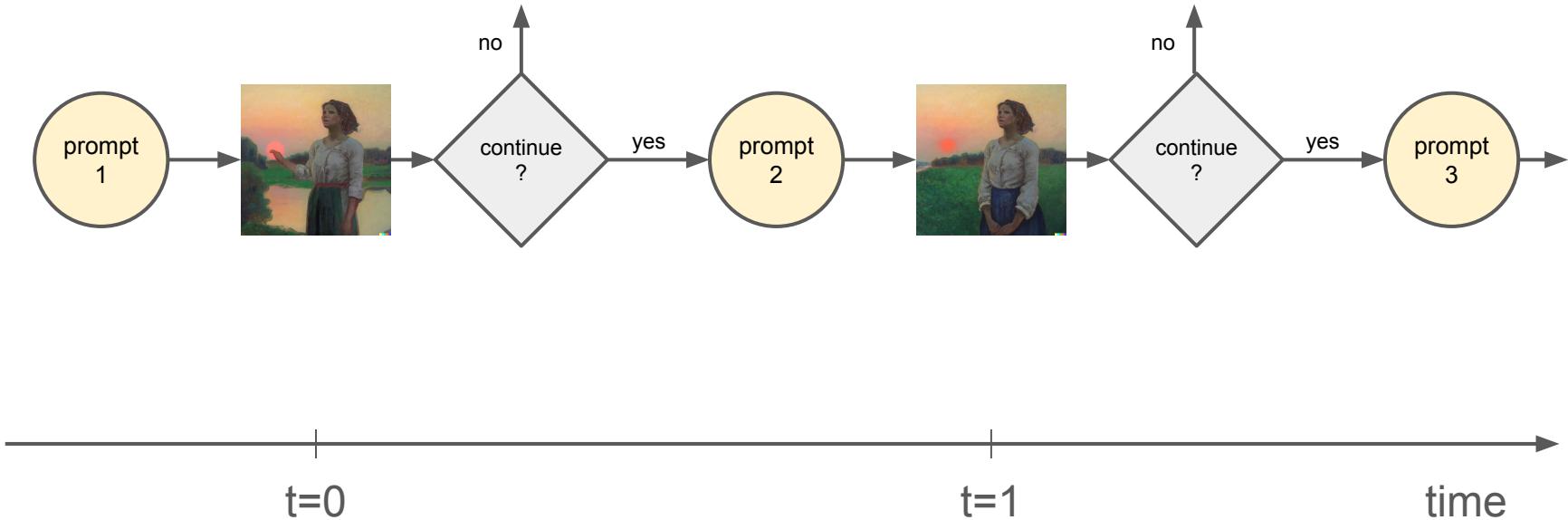


prompt: “April 23, 1986”



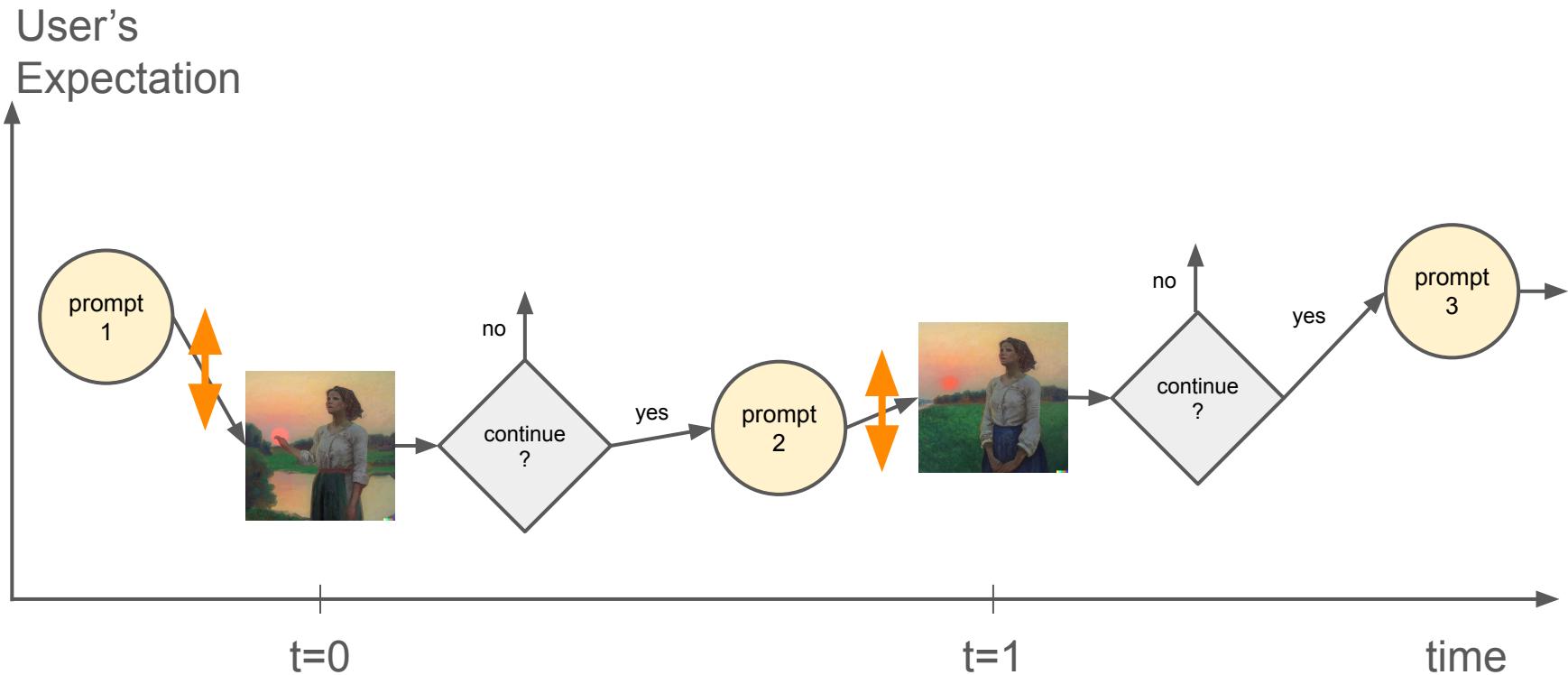
Misalignment

The Creative Process with Generative AI



Misalignment

The Creative Process with Generative AI



Misalignment

The Creative Process with LLMs

The Impact of Generative AI on Critical Thinking: Self-Reported Reductions in Cognitive Effort and Confidence Effects From a Survey of Knowledge Workers

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Thank you



Prompt engineering for text-to-image generation:

- Output control
- Interaction
- Creativity
- Misalignment

Contact Information:

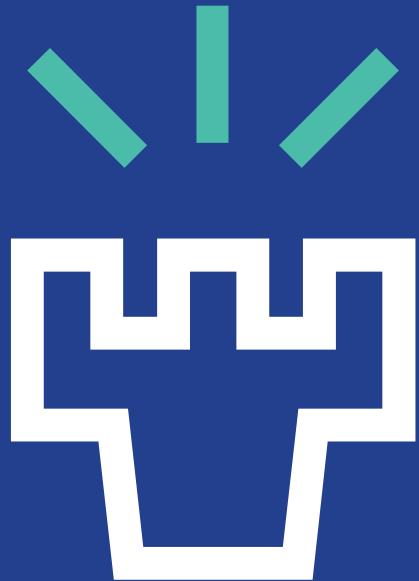
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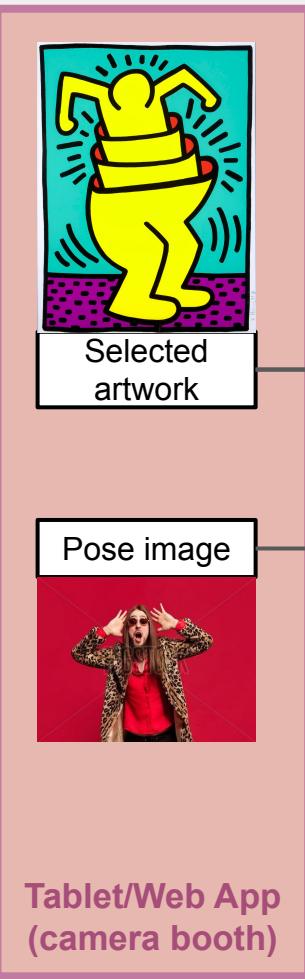
<https://www.oulu.fi/en/researchers/jonas-oppenlaender>

<https://www.jonaso.de>



**UNIVERSITY
OF OULU**

Input



Output

