# Generative AI

## Research Project

Universiteit
Leiden
The Netherlands

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# Research Project

## Description

- Implement a creative support tool or co-creative system.
  - Explore how multiple systems can be brought together to support human creativity.
  - At least one system should be a generative system, e.g., a machine learning model.
  - The generative system may be trained on task-specific datasets, a fine-tuned model, or you may use a pre-trained model.

Working in **groups of 2–3 people**.

Submission deadline is **January 7, 2026** at 23:59.


Stand Back I'm Going to Try Science (© Randall Munroe)

# Project Timeline

**In total you have approx. 12 weeks to complete the Research Project:**

- **Weeks 1–3:** Research, brainstorming, group formation, initial planning
- **Weeks 4:** Project specification, technical research, setup development environment
- **Weeks 5–8:** Core development and implementation (4 weeks)
- **Weeks 9–10:** User testing, experiments, iteration (2 weeks)
- **Weeks 11–12:** Documentation, report writing, final refinements (2 weeks)


Credit: Calvin & Hobbes

# Approaches to Computational Co-Creativity

**Davis et al (2015) distinguish three approaches:**

**Creativity Support Tools**

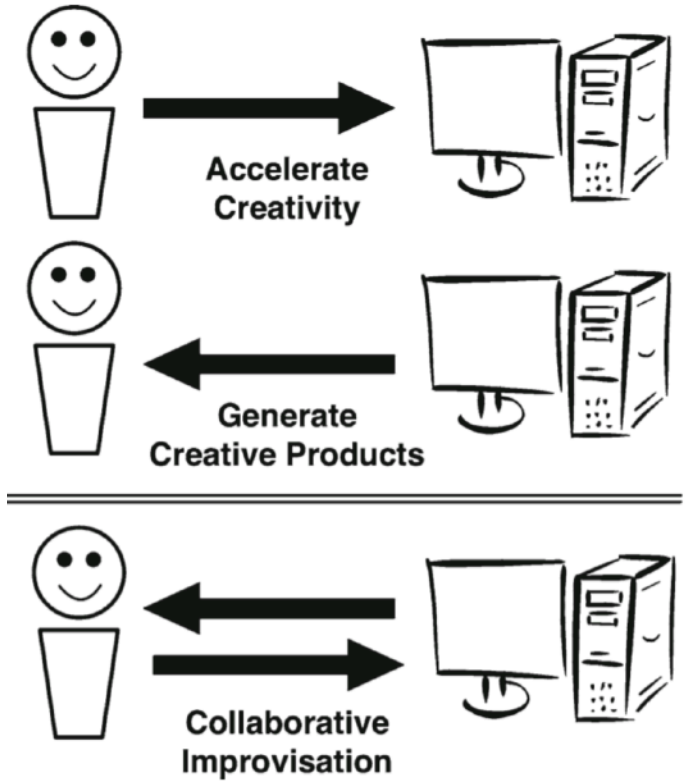
Track history, simulate and explore alternatives to support a creative person

**Generative Systems**

Programs that automatically generate novel, surprising, and valuable creative products

**Computer Colleagues**

Co-creative agents **collaborate** with humans in *continuous* realtime improvisation




Source: Davis et al (2015)

# Creativity Support Tools

**Shneiderman (2007) distinguishes:**

**Productivity Support Tools**

1. Clear task with known requirements
2. Well-defined success metrics
3. Known and relatively well-understood set of users

**Creativity Support Tools**

1. Ill-defined domains with unknown requirements
2. Ill-defined or vague success measures
3. Unknown or unpredictable user base

# Types of Creativity Support Tools

**Nakakoji's (2006) provides the following metaphors:**

**Running shoes:** *improve the abilities of users* to execute a creative task they are already capable of, e.g., highlighting grammatical mistakes in text

Photo by Dulcey Lima on Unsplash

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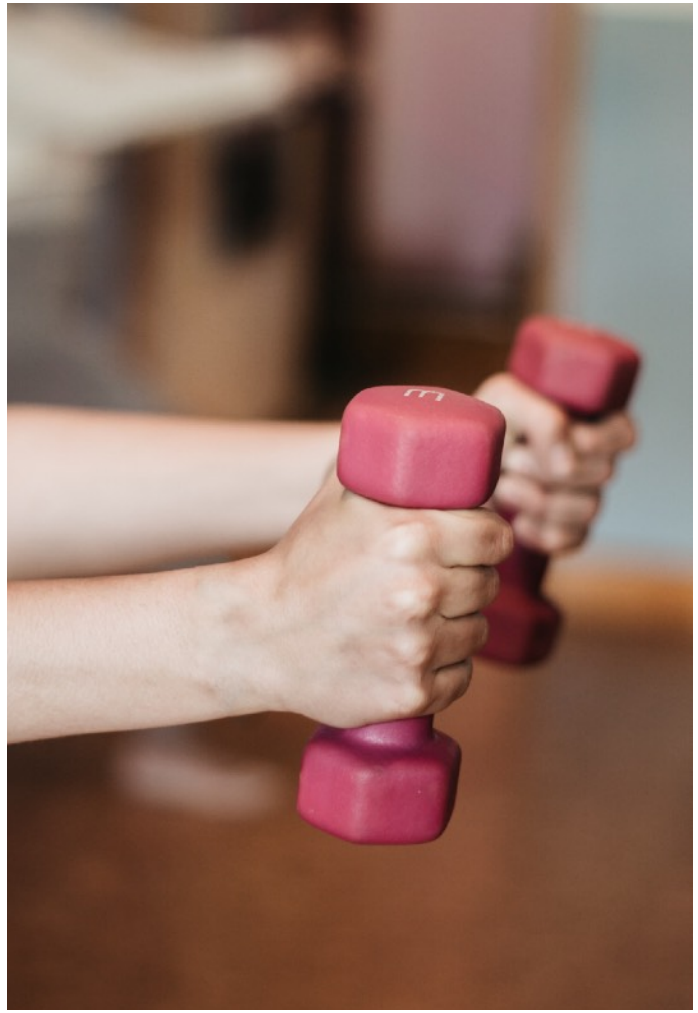

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**Skis:** *provide users with new experiences* of creative tasks that were previously impossible, e.g., simultaneously translating into many diverse languages

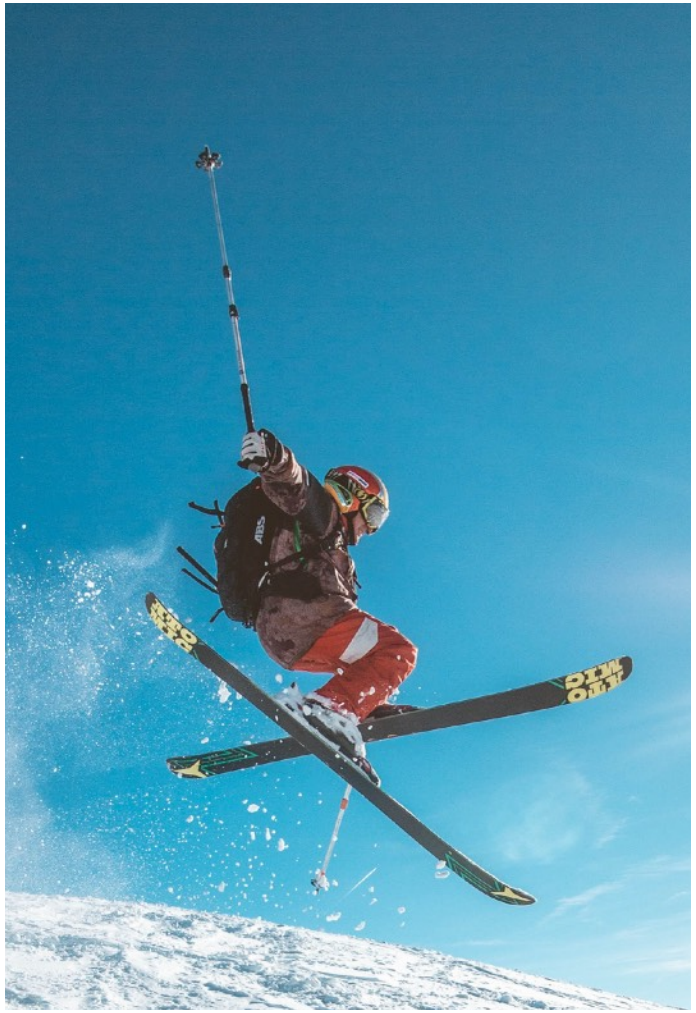

Photo by Matthieu Pétiard on Unsplash

# Getting Started…

**Wednesday 24 September**

Initial brainstorming session

**Wednesday 1 October**

Idea sharing / group formation

**Wednesday 8 October**

Group project pitches

# References


Davis, N, Hsiao, C-P, Popova, Y and Magerko, B. (2015) **An Enactive Model of Creativity for Computational Collaboration and Co-creation**. In: *Creativity in the Digital Age*, 109–133

Nakakoji, K (2006) **Meanings of Tools, Support, and uses for Creative Design Processes.** In: *International Design Research Symposium '06*, Seoul

Shneiderman, B (2007) **Creativity Support Tools: Accelerating Discovery and Innovation**. *Communications of the ACM* **50**(12):20–32. doi:10.1145/1323688.1323689