



PhD in DESIGN - 41st cycle

THEMATIC Research Field: SYNTHETIC DATA FOR MORE-THAN-HUMAN DESIGN SPECULATION

Monthly net income of PhDscholarship (max 36 months)

€ 1300.0

In case of a change of the welfare rates during the three-year period, the amount could be modified.

Context of the research activity

Motivation and objectives of the research in this field

The growing influence of artificial intelligence (AI) and machine learning (ML) invites critical engagement with how these technologies shape multispecies and more-than-human relationships. Current AI systems and synthetic data generation methods, whether based on statistical modeling, generative networks, or simulation approaches, remain grounded in biased datasets and colonial knowledge structures, often reproducing epistemic violence and marginalizing nonhuman agencies. **This PhD project investigates synthetic data as a speculative tool for fostering more-than-human futures**, emphasizing pluriversal and decolonial practices. Research objectives:

- 1. Explore how synthetic data can enact more-than-human entanglements**, fostering multispecies justice and ecological responsiveness.
- 2. Develop decolonial frameworks for synthetic data production** that resist epistemic violence and promote pluriversal world-making.
3. Investigate how synthetic modeling can center situated knowledge and **avoid universalizing or extractive modeling practices**.
- 4. Probe synthetic data prototypes as speculative design tools** to interrogate contested realities and imagine alternative more-than-human futures.
5. Develop alternative approaches to current synthetic data practices that better **represent more-than-human**



	<p>relationships and ecological complexities.</p> <p>Broader impact: By integrating decolonial perspectives and situated ecological practices, this research in synthetic data for more-than-human design challenges the colonial legacies and geopolitical positionality of current AI systems, illuminating new sociotechnical pathways for more equitable futures.</p>
<p>Methods and techniques that will be developed and used to carry out the research</p>	<p>The research will follow a Research through Design approach and will entail:</p> <ol style="list-style-type: none"> 1. Theoretical framing: Engage with multispecies justice, decolonial theory, and relational ontologies to position synthetic data within more-than-human design practices. 2. Technical development: Engage with machine learning frameworks and generative models to create synthetic datasets that represent more-than-human relationships and ecological dynamics. 3. Design experiments: Develop synthetic data-driven speculative design projects, reflecting on their impact in promoting more-than-human futures. 4. Prototyping and reflexive evaluation: Create and evaluate synthetic data prototypes, emphasizing their potential for place-based, justice-oriented action. 5. Critical analysis: Apply decolonial and feminist frameworks to evaluate the ethical implications and effectiveness of synthetic data prototypes.
<p>Educational objectives</p>	<p>This PhD position will prepare the candidate to become a leading researcher in more-than-human AI and synthetic data. The position is designed to cultivate interdisciplinary expertise at the intersection of AI, synthetic data, and more-than-human design, fostering the ability to critically engage with emerging technologies through decolonial and multispecies perspectives. The selected candidate will develop a unique combination of theoretical, technical, and speculative design skills, contributing to transformative research on synthetic data for ecological</p>



and justice-oriented futures.

Educational objectives:

1. Develop a critical understanding of AI, synthetic data, and their sociotechnical implications

- Understand the historical and geopolitical dimensions of AI and their entanglement with colonial knowledge structures.
- Critically assess the biases and epistemic violence embedded in existing synthetic data practices.

2. Engage with decolonial, more-than-human, and pluriversal theories

- Study key texts in decolonial theory, multispecies justice, and relational, more-than-human ontologies to frame synthetic data as a speculative and political medium.
- Explore how feminist epistemologies can inform new modes of AI and data production.

3. Develop technical and computational proficiency in synthetic data creation

- Acquire hands-on experience with machine learning frameworks, generative adversarial networks (GANs), and synthetic data pipelines for more-than-human modeling.
- Experiment with data augmentation, simulation, and multimodal synthesis techniques to explore alternative approaches to representation.

4. Explore speculative design as a methodology

- Develop design probes and experimental prototypes that challenge dominant AI narratives and introduce pluriversal world-making perspectives.
- Engage with diverse stakeholders, including artists, activists, ecologists, and AI practitioners, to explore



	more-than-human applications of synthetic data speculation.
Job opportunities	The graduate of this PhD research will be well-positioned for diverse career pathways at the intersection of AI, synthetic data, and more-than-human design. The interdisciplinary nature of the research -spanning speculative design, machine learning, decolonial theory, and ecological justice - opens up opportunities in academia, industry, policy, and the creative sector
Composition of the research group	2 Full Professors 4 Associated Professors 1 Assistant Professors 0 PhD Students
Name of the research directors	Elisa Giaccardi, Chris Speed (RMIT, Australia)

Contacts	
elisa.giaccardi@polimi.it https://dipartimentodesign.polimi.it/it/gruppi-di-ricerca/design-intelligences	

Additional support - Financial aid per PhD student per year (gross amount)	
Housing - Foreign Students	--
Housing - Out-of-town residents	--

Scholarship Increase for a period abroad	
Amount monthly	650.0 €
By number of months	6

Stage and period abroad	
Institution or company where the candidate will spend the period abroad (name and brief description)	
By number of months abroad	0

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
Educational activities (purchase of study books and material, funding for participation in courses, summer schools, workshops and conferences) financial aid per PhD student per year: 5.300,25 euros per student (total for 3 years)



Teaching assistantship (availability of funding in recognition of supporting teaching activities by the PhD student): There are various forms of financial aid both for research and teaching activities. The PhD student is encouraged to take part in these activities, within the limits allowed by the regulations.

Computer availability: 1st year, 2nd year and 3rd year: Each research group may supply phd student with a laptop/desktop PC, if necessary.

Desk availability: 1st year, 2nd year and 3rd year: Each research group may supply phd student with a desk.