



# Call for Postdoctoral Applications in Multimodal Signal Processing and Embodied AI

## University of Campinas (UNICAMP)

Join the cutting-edge research environment at the H.IAAC ([Hub de Inteligência Artificial e Arquiteturas Cognitivas](#)) at the University of Campinas (Unicamp), where we are dedicated to pioneering advancements in Artificial Intelligence. We invite applications for a prestigious postdoctoral position in Multimodal Signal Processing and Embodied AI, offering an exceptional opportunity to contribute to transformative research that bridges sensory data integration and real-world understanding in intelligent agents. At H.IAAC, you will be at the forefront of exploring how multimodal signals and causal reasoning can revolutionize the development of embodied agents capable of sophisticated interactions with their environments.

In this position, your challenge will be to develop foundational models that integrate various sensory modalities (such as visual, auditory, and sensor data) to enable a deep understanding of physical interactions in the real world. You will be involved in pioneering research aimed at creating generally capable embodied agents, with a particular focus on the role of multimodal data in constructing accurate and reliable world models. Additionally, you will be responsible for investigating how these models of world understanding can be integrated into the cognitive architectures currently under development at H.IAAC, contributing to the advancement of these architectures toward more intelligent and autonomous systems.

Researchers in this position will be strongly encouraged to publish their results in top scientific journals and international conferences and will have the university's full support to generate patents. This position will also provide the opportunity to interact with other research carried out in H.IAAC, supervise students in partnership with professors of the university, and possibly contribute to advanced courses.

### Key Responsibilities

Researchers in this position are expected to:

- Conduct innovative and high-impact research in the areas of multimodal signal processing, embodied AI, and causal world modeling.
- Develop and evaluate novel architectures and algorithms that integrate data from various sensory modalities (e.g., vision, audio, touch) to improve the understanding and interaction with the physical world.
- Investigate how models of world understanding can be integrated into the cognitive architectures under development at H.IAAC.
- Publish and present research findings at high-impact conferences, workshops, and journals.
- Supervise graduate and undergraduate students in collaboration with faculty members.
- Contribute to the management of research projects and participate in outreach activities, such as public lectures and events.

## Qualifications

- A Ph.D. in Computer Science, Electrical Engineering, Artificial Intelligence, or a related field.
- A strong background in image, audio, and video processing, with a focus on multimodal signal integration.
- Strong programming skills in languages such as Python, C++, or Java, with a preference for experience in deep learning frameworks.
- A record of publishing in relevant, high-quality conferences or journals.
- Ability to work independently and as part of a multidisciplinary team, with excellent communication skills in English.

## Our offer

- **Two open positions** under the supervision of professors **Paula Dornhofer P. Costa** and Esther Colombini.
- 18-month contract with a monthly scholarship of 10,000.00 BRL (Brazilian Real), based on a full-time commitment of 40 hours per week.
- In-person work is required, with computing resources and a supportive working environment provided.
- Opportunities to advance your research career, including publishing, supervising students, and engaging with leading researchers in the field.
- The chance to contribute to a vibrant research ecosystem at Unicamp, one of the top universities in Brazil.

## How to apply

Interested candidates should submit the following documents:

- Academic Curriculum Vitae: Prepare your CV in a format that emphasizes your main contributions or most relevant works, similar to the FAPESP model of curriculum.
- Summary Document: A combined document (maximum 3 pages) that includes both a cover letter and a research work plan. This document should summarize your research interests, relevant experience, career goals, and a proposed work plan aligned with the themes of multimodal signal processing and embodied AI.
- Academic Records and at least one reference letter (the letter can be sent directly to the contact email below).

## Application Deadline

Please submit your application via email by **October 13th**.

For more information and to apply, please contact:

[paulad@unicamp.br](mailto:paulad@unicamp.br)  
[esther@ic.unicamp.br](mailto:esther@ic.unicamp.br)

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