2025 IEEE INTERNATIONAL CONFERENCE ON DEVELOPMENT AND LEARNING (ICDL)

PRAGUE, CZECHIA, SEPTEMBER 16-19

Topics (including but not limited to):

- General principles and theories of development and learning;
- Embodied learning in biological systems and robots;
- Development of skills in biological systems and robots;
- Developmental stages and sensitive periods;
- Architectures for cognitive development and life-long learning;
- Emergence of body knowledge and affordance perception;
- Learning control of body movement;
- (models of) curiosity, intrinsic motivations, exploration, play and active learning;
- (models for) prediction, planning and problem solving;
- developmentally-inspired machine learning;
- Applications of machine learning to human and animal development;
- Emotional development and the role of emotion in learning;
- Emergence of verbal and nonverbal communication;
- Metacognitive skills and the role of metacognitive learning and explicit communication;
- (models of) human–human and human–system interaction;
- Epistemological foundations and philosophical issues;
- The relationship between evolution and development;
- Ethics in modeling learning and development.

General chair: Matej Hoffmann
Program chairs: Alessandra Sciutti, Emre Ugur, Katharina J. Rohlfing

https://icdl2025.fel.cvut.cz/

Submissions categories:

- **Contributed papers (6 pages; up to 2 extra pages with charges).** Accepted papers will be published in the IEEE ICDL Proceedings (available at https://ieeexplore.ieee.org/). Deadline: ~~March 14, 2025~~ April 3, 2025.
- **Workshop and tutorial proposals. Deadline:** ~~March 14, 2025~~ March 28, 2025.
- **Journal Track.** Apply to present your journal article published in the March 2024-March 2025 period on topics relevant to the conference. **Deadline: April 1, 2025.**
- **Late-breaking results (1-page abstracts).** Accepted abstracts to be presented as posters, and not be included in the conference proceedings. **Deadline: June 13, 2025.**

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SUBMISSION

All submissions are through PaperPlaza (https://ras.papercept.net/).
All submissions need to use standard IEEE two-column paper templates (https://ras.papercept.net/conferences/support/support.php).
We accept four types of research submissions.

Full 6-page paper submissions—deadline: ~~March 14, 2025~~ **March 28, 2025**. Papers of at most 6 pages in IEEE double column format will undergo peer-review, and accepted and presented submissions will be included in the conference proceedings published by IEEE Xplore. Up to two extra pages are acceptable for a publication fee of $100 per page. Accepted papers will be invited for presentation either in oral or poster format.

Workshop and tutorial proposals—deadline: ~~March 14, 2025~~ **March 28, 2025.** Workshops proposals can be submitted for one-day or half-day-workshop that will take place on the first day of the conference. The proposals should motivate the topic and provide a schedule (topics covered by all speakers).

Journal-track posters—deadline: April 1, 2025. Journal track poster submissions must be about a journal paper that has been published the March 2024 – March 2025 period (online ahead of print is fine) on a topic relevant to the conference.

Late-breaking posters with 1-page abstract—deadline: June 13, 2025: To encourage discussion of late-breaking results or for work that is not sufficiently mature for a full paper, we will accept 1-page abstracts. These submissions will not be included in the conference proceedings. Accepted abstracts will be presented during the poster session.

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ICDL is a unique conference gathering researchers from both computational science (including robotics, AI, cognitive architecture) and developmental studies (psychology, linguistics, anthropology, education, philosophy) for a fertile exchange sharing ideas, perspectives, knowledge, research findings on how humans and animals develop sensing, reasoning and actions, including interactive ecologies and how these capabilities can be implemented in computing (embodied) systems. This approach goes hand in hand with the goal of both understanding human and animal development and how this can be applied to improve future intelligent technology including all kinds of artificial systems that will be in close interaction with humans.

KEYNOTE SPEAKERS

Jeff Krichmar (University of California, Irvine)
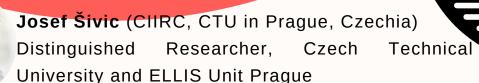Professor in the Department of Cognitive Sciences and the Department of Computer Science

Masako Myowa-Yamakoshi (Kyoto University, Japan)
Professor at Graduate School of Education / Faculty of Education

Giulio Sandini (IIT Genoa, Italy)
Founding Director at the Italian Institute of Technology and full professor of bioengineering at the University of Genoa

Tilbe Göksun (Koç University, Turkey)
Professor of Psychology at Koç University

Josef Šivic (CIIRC, CTU in Prague, Czechia)
Distinguished Researcher, Czech Technical University and ELLIS Unit Prague

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We invite **submissions** to explore, extend, and consolidate the interdisciplinary boundaries of this exciting research field.

In addition to the usual paper submission-selection process, we announce two challenges: the **BabyBot Challenge** and the (new!!) **BabyObserve Challenge**.

The **BabyBot Challenge** will award computational models that capture core aspects of specific psychology experiments.

BabyBot Challenge Paper Award

Babybot Challenge papers are expected to establish a strong link between developmental psychology and robotics and/or computational modeling. Submissions will be judged by the following criteria:

- How well does the computational model (e.g., an artificial system, which can be a robot, artificial system, or a software agent) represent the particular features of the experimental research addressed.
- How closely the performance of the model replicates the experimental findings and how parsimonious is the model.
- How explicit the model is about cognitive mechanisms and the
- The extent of the novel insights or explanations generated by the model, and importantly whether the model make interesting and testable predictions.

We encourage the authors to tag their submission for "Babybot Challenge" award during contributed paper submission, which would indicate that there is significant content that puts the paper in the spotlight of "Babybot Challenge".

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The **BabyObserve Challenge** will foster the community's discoveries in research related to the development of cognition and learning and go beyond what is currently in focus. Submissions that address both challenges at the same time are also welcome.

BabyObserve Challenge Paper Award

This Challenge is new, and its intention is to foster the community's discoveries in research related to the development of cognition and learning that go beyond what is currently in focus. BabyObserve Challenge papers are expected to introduce novel or "edge case" phenomena to the ICDL community from observations of child development, as well as related mechanisms, interplays of skills, and properties of (environmental and/or social) ecologies that promote it. Observations can result in quantitative or qualitative research that is further described in the paper.

Submissions will be judged by the following criteria:

- How innovative is the phenomenon and why it is important for the ICDL community
- How well is the phenomenon described to inspire computational models
- How well is the phenomenon theoretically grounded or linked to the existing literature

We encourage the authors to tag their submission for "BabyObserve Challenge" award during contributed paper submission, which would indicate that there is significant content that puts the paper in the spotlight of "BabyObserve Challenge".

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IEEE Computational Intelligence Society

IEEE Robotics & Automation Society