IEEE Transactions on Cognitive and Developmental Systems
Special Issue on Emerging Topics on Development and Learning

I. AIM AND SCOPE

This special issue aims to track the state-of-the-art progress on development and learning in natural and artificial systems. It concentrates on development and learning from a multidisciplinary perspective – Researchers from computer science, robotics, psychology, and developmental studies are solicited to share their knowledge and research on how humans and animals develop sensing, reasoning and actions, and how to exploit robots as research tools to test models of development and learning. We expect the submitted contributions emphasize the interaction with social and physical environments and how cognitive and developmental capabilities can be transferred to computing systems and robotics. This approach goes hand in hand with the goals of both understanding human and animal development and applying this knowledge to improve future intelligent technology, including for robots that will be in close interaction with humans.

Besides the open submissions, the special issue will also play the role of a accompanying archive for highly appraised papers published at IEEE International Conference on Development and Learning (ICDL). Selected papers presented at ICDL 2021 will be invited to submit extended versions to the special issue. All submissions, including those that are based on ICDL 2021 papers, will be reviewed as regular TCDS papers before final acceptance.

II. THEMES

The primary list of topics of interest include, but not limited to:
- Principles and theories of development and learning;
- Development of skills in biological systems and robots;
- Models on the contributions of interaction to learning;
- Non-verbal and multi-modal interaction;
- Nature vs. nurture, developmental stages;
- Models on active learning;
- Architectures for lifelong learning;
- Emergence of body and affordance perception;
- Analysis and modelling of human motion and state;
- Models for prediction, planning and problem solving;
- Models of human-human and human-robot interaction;
- Emergence of verbal and non-verbal communication;
- Epistemological foundations and philosophical issues;
- Robot prototyping of human and animal skills;
- Ethics and trust in computational intelligence and robotics;
- Social learning in humans, animals, and robots.

III. SUBMISSION

Manuscripts should be prepared according to the "Information for Authors" of the journal found at

https://cis.ieee.org/publications/t-cognitive-and-developmental-systems/tcds-information-for-authors, and submissions should be done through the IEEE TCDS Manuscript center:

https://mc.manuscriptcentral.com/tcds-ieee. Please select the category "SI: ETDL".

IV. IMPORTANT DATES

Actions	Deadline
Initial Submission Deadline	15 Dec. 2021
Notification of the First Revision Results	15 Mar. 2022
Revision Submission Deadline	10 Apr. 2022
Notification of Final Acceptance	30 Jun 2022

V. GUEST EDITOR

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