



IEEE Open Journal of Control Systems (OJ-CSYS)

Special Section on Intersection of Machine Learning with Control

*This special section is recurring.

Harnessing the power of machine learning to continuously monitor and detect anomalies advances the state of the art in instrumentation control. Learning-enabled systems have been rapidly increasing in size and acquiring new capabilities. These systems are typically deployed in complex operating environments, so their safety becomes extremely important. Ensuring safety requires that systems are robust to extreme events while we can monitor them for anomalous and unsafe behavior. While traditional machine learning systems are evaluated pointwise with respect to a fixed test set, such static coverage provides only limited assurance when exposed to unprecedented conditions in complex operating environments. One key question that remains unanswered is: How can we design and deploy learning-enabled systems that can be robust to extreme events while monitoring them for anomalous and unsafe behavior? This special issue aims to contribute to this growing area of interest and thus calls for papers in this topical area.

Prospective authors are invited to submit original contributions on related topics including, but are not limited to, the following:

- Machine learning for dimensionality reduction and system identification
- Emerging applications for learning-based control
- Data-driven optimization and control for dynamical systems
- Safe reinforcement learning and safe adaptive control
- Bridging model-based and learning-based control systems
- Distributed learning over distributed systems
- Reinforcement learning for multiagent systems
- Optimization, dynamics and control for machine learning
- Reinforcement learning and statistical learning for dynamical and control systems

Special Section Schedule:

- **Special Section Submission Window: 15 October 2024 – 15 April 2025**
- Notification of reviews of and recommendations: 10 weeks after initial submission
- Final notification of regular papers: 20 weeks after initial submission
- Manuscript publication on IEEE Xplore: 24 weeks after initial submission

* Review process starts at time of manuscript submission

Submission Site: <https://css.paperplaza.net/>

Length: 10-15 pages, not including references. Justification of longer papers is required.

Discounts: The first 8 papers published in this special section are eligible for a 50% discount on APCs.

***Open Journal of Control Systems (OJ-CSYS)** covers significant theoretical and applied developments that impact the field of dynamic systems and control. The field integrates elements of sensing, communication, decision and actuation components as relevant for the analysis, design and operation of dynamic systems and control. The systems considered include: technological, physical, biological, economic, organizational and other entities, and combinations thereof.*

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