

## Modern Rate-Distortion Theory: Advances, Applications, and Challenges

### Call for papers

The field of rate-distortion theory has witnessed remarkable advancements in recent years, fueled by innovations in information theory, signal processing, machine learning, and related disciplines. These advancements have paved the way for novel techniques and applications in data compression, image and video coding, communication systems, and beyond. To showcase the latest developments and foster discussions on the future directions of modern rate-distortion theory, we invite researchers and practitioners to submit their original contributions to a special issue on "Modern Rate-Distortion Theory: Advances, Applications, and Challenges."

### Topics of Interest:

- Novel rate-distortion tradeoff formulations and analysis
- Deep learning approaches to rate-distortion optimization
- Rate-distortion theory in distributed and decentralized systems
- Rate-distortion theory for non-standard sources (e.g., graph data, time series)
- Applications of rate-distortion theory in image and video compression
- Rate-distortion theory in multi-user communication systems
- Rate-distortion theory for streaming and real-time applications
- Cross-disciplinary applications of rate-distortion theory (e.g., biology, neuroscience)

**Submission Guidelines:** Authors are invited to submit original research contributions or review articles. Submissions must be formatted according to the journal's guidelines and should not exceed 12 pages in length (including references). Manuscripts should be submitted via the online submission system.

### Important Dates:

- Paper Submission Deadline: September 30, 2024
- Notification of Acceptance: December 15, 2024
- Final Manuscript Due: January 31, 2025
- Publication: Spring 2025

### Guest Editors:

- Dr. Alicia Reynolds, Department of Electrical Engineering, University of New York
- Dr. Benjamin Carter, Institute of Information Science, Technological University of Tokyo
- Dr. Maria Rodriguez, Department of Computer Science, Stanford University

We look forward to receiving your contributions and to the collective exploration of the forefront of modern rate-distortion theory.