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Coding and Algorithms for DNA-Based Data Storage Systems

Guest Editors:

Prof. Dr. Olgica Milenković
Department of Electrical and Computer Engineering, University of Illinois Urbana-Champaign, Urbana, IL 61801, USA

Dr. Jin Sima
Department of Electrical and Computer Engineering, University of Illinois Urbana-Champaign, Urbana, IL 61801, USA

Deadline for manuscript submissions:
closed (30 September 2025)

Message from the Guest Editors

Dear Colleagues,

Molecular storage, and DNA-based data storage in particular, has emerged as a viable alternative to classical optical and magnetic recorders due to its ultra-high storage density, durability and ease of data replication. Still, practical advances in the field are hampered by the lack of low-cost and parallel synthesis platforms, and the size and time-delays of the read-write connectome and sequencing platforms. To mitigate some of these problems and ensure high levels of data integrity, specialized new coding and machine learning solutions have been proposed for random data access, data sequencing and retrieval. The goal of the Special Issue is to showcase new results in the field of coding theory and computational and learning algorithm design that strengthen the case for archival DNA-based data storage.

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Editor-in-Chief

Prof. Dr. Kevin H. Knuth
Department of Physics, University at Albany, 1400 Washington Avenue, Albany, NY 12222, USA

Message from the Editor-in-Chief

The concept of entropy is traditionally a quantity in physics that has to do with temperature. However, it is now clear that entropy is deeply related to information theory and the process of inference. As such, entropic techniques have found broad application in the sciences.

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Contact Us

Entropy Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
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