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Microform and Macromolecules: Archiving digital data on analog or biological storage media

Tuesday 25 October 2022 10:30 (30 minutes)

Today, we live in a data-driven society. For decades, we wanted fast storage devices that can quickly deliver data, and storage technologies evolved to meet this requirement. As data-driven decision making becomes an integral part of enterprises, we are increasingly faced with a new need—one for cheap, long-term storage devices that can safely store the data we generate for tens or hundreds of years to meet legal and regulatory compliance requirements.

In this talk, we will first explore recent trends in the storage hardware landscape that show that all current storage media face fundamental limitations that threaten our ability to store, much less process, the data we generate over long time frames. We will then focus on unconventional biological and analog media that have received quite some attention recently—synthetic Deoxyribonucleic acid (DNA) and film. After highlighting the pros and cons of using each as a digital storage media, I will present our recent work in the EU-funded Future and Emerging Technologies (FET) project OligoArchive, that focuses on overcoming challenges in using such media to build a deep archival tier for data management systems.

Experiment context, if any

References

Significance

Presenter: APPUSWAMY, Raja (Eurecom)

Session Classification: Plenary