DNA Storage & Molecular Computing

DNA Storage

- 215 petabytes per gram
- Stable for thousands of years
- Biological data encoding

DNA Computing

- Parallel molecular reactions
- DNA strand operations
- Bio-compatible computation

Medical Applications

- Long-term medical record archival
- In-vivo diagnostics
- Programmable therapeutics

Challenges

- Slow read/write speeds
- High error rates
- Expensive synthesis

🧬 Biological Computing

DNA-based systems offer unprecedented storage density and enable in-vivo computation for diagnostics and therapeutics, though current technology remains experimental.