



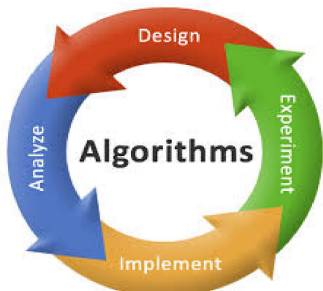
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Data Management, Engineering & Analysis (DAMGA)  
Research Laboratory

The machines and people in mobile age generate and transmit unprecedented volumes of data in a dazzling speed and variety. In this data flood, current focus of the DAMGA lab is the design, analysis, and engineering of discrete algorithms with applications on massive data management and analysis.

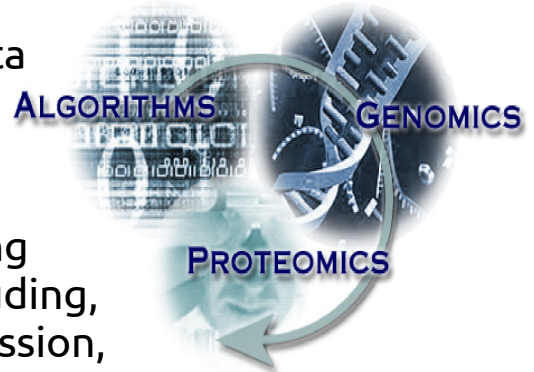
## Theoretical Foundations



We study the theoretical foundations of the main issues in massive data management, with a particular emphasize on lossless data compression, compressed data structures, compact number representations, search algorithms, information retrieval, pattern matching, and text indexing.

## Bioinformatics

Turning the enormous amounts of biological data produced by high-throughput DNA sequencing equipments into knowledge introduces hard problems. We are mostly interested in the design and implementation of the tools targeting combinatorial challenges in bioinformatics, including, but not limited to, alignment, assembly, compression, search, privacy, and archival of sequencing data.



## Search Technologies



Creating search engines over unstructured/semi-structured data is an area of our concern. We focus on in-memory indexing schemes, error-tolerant fuzzy search, packed string matching with SIMD architectures, and privacy-preserving aspects of text processing in cloud computing services.

In the near future, we also consider to study the extensions of our basic research topics on financial data engineering and energy-aware computing. We look for highly motivated graduate students as well as post-docs to join our lab. Feel free to contact us to discuss your own research proposal or to hear about our offers.