Examples for Project Topics

1) Out-of-core data structures for priority queues, dictionaries, hashing, etc.
2) Out-of-core algorithms for the construction of suffix arrays and suffix trees
3) Out-of-core algorithms for graph problems
4) Out-of-core algorithms for clustering
5) Out-of-core algorithms for sequence analysis
6) Biological data compression (DNA and protein sequences, for example)
7) Biological data reduction techniques
8) Out-of-core algorithms for rules mining
9) Out-of-core algorithms for matrix problems
10) Out-of-core algorithms for motif search (planted motif search, for example)
11) Efficient algorithms for k-mer counting
12) Efficient algorithms for sequence assembly
13) Efficient algorithms for the closest pair problem
16) Tong Yang, Binchao Yin, Hang Li, Muhammad Shahzad, Steve Uhlig, Bin Cui, and Xiaoming Li, Rectangular Hash Table: Bloom Filter and Bitmap Assisted Hash Table with High Speed, IEEE Big Data 2017.
22) Yizhou Yan, Lei Cao, and Elke Rundensteiner, Distributed Top-N Local Outlier Detection in Big Data, IEEE Big Data 2017.
27) Byron Gao, Robert Tung, and Yong Yang, Iterative Matrix Correlation for Bisection Clustering, IEEE Big Data 2017.
38) Dianwei Han, Parallel DBSCAN Algorithm Using a Data Partitioning Strategy with Spark Implementation, IEEE Big Data 2018.