

4005-735 Parallel Computing I: Project Proposal

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- 1 Computational Problem**
- 2 Code Deliverables**
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Bibliography

- [1] *Longest common subsequence problem*. <http://goo.gl/5bMjT>.
- [2] Amihood Amir, Zvi Gotthilf, and B Shalom. Weighted lcs. *Journal of Discrete Algorithms*, 8(3), Sep 2010.
- [3] Hsing-Yen Ann, Chang-Biau Yang, Yung-Hsing Peng, and Bern-Cherng Liaw. Efficient algorithms for the block edit problems. *Information and Computation*, 208(3), Mar 2010.
- [4] Alberto Apostolico. General pattern matching. *Algorithms and theory of computation handbook*, Feb 2010.
- [5] Azzedine Boukerche, Alba Melo, Mauricio Ayala-Rincón, and Maria Walter. Parallel strategies for the local biological sequence alignment in a cluster of workstations. *Journal of Parallel and Distributed Computing*, 67(2), Feb 2007.
- [6] Kuan-Yu Chen and Kun-Mao Chao. A fully compressed algorithm for computing the edit distance of run-length encoded strings. *ESA'10: Proceedings of the 18th annual European conference on Algorithms: Part I*, Sep 2010.
- [7] Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, and Clifford Stein. *Introduction to Algorithms*. The MIT Press, 2nd edition, 2001.
- [8] Maxime Crochemore, Marcin Kubica, Tomasz Waleń, Costas Iliopoulos, and M Rahman. Finding patterns in given intervals. *Fundamenta Informaticae*, 101(3), Aug 2010.
- [9] Sebastian Deorowicz. Bit-parallel algorithm for the constrained longest common subsequence problem. *Fundamenta Informaticae*, 99(4), Dec 2010.

- [10] Bryan Franklin and Steven Seidel. A parallel longest common subsequence algorithm in upc. *SpringSim '10: Proceedings of the 2010 Spring Simulation Multiconference*, Apr 2010.
- [11] Hongyu Gao, Jun Hu, Christo Wilson, Zhichun Li, Yan Chen, and Ben Zhao. Detecting and characterizing social spam campaigns. *IMC '10: Proceedings of the 10th annual conference on Internet measurement*, Nov 2010.
- [12] Mordecai Golin and Yan Zhang. A dynamic programming approach to length-limited huffman coding: space reduction with the monge property. *IEEE Transactions on Information Theory*, 56(8), Aug 2010.
- [13] Yong-Hyuk Kim, Wonkook Kim, Kyungsub Min, and Yourim Yoon. Probabilistic context prediction using time-inferred multiple pattern networks. *SAC '10: Proceedings of the 2010 ACM Symposium on Applied Computing*, Mar 2010.
- [14] J Liu. Distinct squares in run-length encoded strings. *Theoretical Computer Science*, 411(49), Nov 2010.
- [15] Wei Liu, Ling Chen, and Lingjun Zou. A parallel lcs algorithm for biosequences alignment. *InfoScale '07: Proceedings of the 2nd international conference on Scalable information systems*, Jun 2007.
- [16] M Rahman and Costas Iliopoulos. A new efficient algorithm for computing the longest common subsequence. *AAIM '07: Proceedings of the 3rd international conference on Algorithmic Aspects in Information and Management*, Jun 2007.
- [17] Nuraini Rashid, Rosni Abdullah, and Abdullah Talib. Parallel homologous search with hirschberg algorithm: a hybrid mpi-pthreads solution. *ICCOMP'07: Proceedings of the 11th WSEAS International Conference on Computers*, Jul 2007.
- [18] Leonardo Ribeiro and Theo Härder. Generalizing prefix filtering to improve set similarity joins. *Information Systems*, 36(1), Mar 2011.
- [19] Claus Rick. Efficient computation of all longest common subsequences. *SWAT '00: Proceedings of the 7th Scandinavian Workshop on Algorithm Theory*, Jul 2000.

- [20] Yoshifumi Sakai. A linear space algorithm for computing a longest common increasing subsequence. *Information Processing Letters*, 99(5), Sep 2006.
- [21] Xiaoming Sun and David Woodruff. The communication and streaming complexity of computing the longest common and increasing subsequences. *SODA '07: Proceedings of the eighteenth annual ACM-SIAM symposium on Discrete algorithms*, Jan 2007.