Group A: Burstsort

Members

- Davis, Keith
- Kääriä, Erkka
- Lang, Sean
- Mukhtar, Usama
- Mäki, Timo
- Määttä, Mikko
- Tuominen, Markus
- Zosa, Elaine

Advance reading. Read at least Section 1 of the following paper before the study group session.

Ranjan Sinha, Anthony Wirth:

**Engineering Burstsort: Toward fast in-place string sorting.**

[http://dx.doi.org/10.1145/1671970.1671978](http://dx.doi.org/10.1145/1671970.1671978)

Topics for Discussion. Discuss at least the following topics in your group. Prepare to summarize the discussion for members of the other groups.

- The burst trie. How does it differ from the standard trie?
- The basic idea of burstsort. Why is it faster than MSD radix sort?
- The two improvements: sampling-based burstsort and copy-based burstsort. Why are they faster?

You may also discuss additional topics, for example:

- The main new ideas of the paper. How effective are they in practice?
Group B: Weak Prefix Search

Members

- Aalto, Iiro
- Hantula, Otto
- He, Yan
- Salonen, Sami
- De Leydet, Remy
- Vozda, Lukas
- Vaaninen, Pekka

Advance reading.  Read at least Sections 1 and 2 of the following paper before the study group session.

[http://dx.doi.org/10.1016/j.tcs.2012.06.011](http://dx.doi.org/10.1016/j.tcs.2012.06.011)

Topics for discussion.  Discuss at least the following topics in your group. Prepare to summarize the discussion for members of the other groups.

- The weak prefix search problem. How does it differ from the standard prefix search problem?
- The Patricia trie. How does it differ from the standard compact trie?
- How is Patricia trie used for solving the weak prefix search problem?

You may also discuss additional topics, for example:

- The basic ideas of the techniques in section 3.
Group C: Sparse Suffix Sorting

Members

- Björklund, Otso
- Duda, Tomáš
- Equi, Massimo
- Ivanova, Sardana
- Leivo, Marcus
- Myllyoja, Aleksi
- Sinkkonen, Ilari
- Szkalisity, Ábel

Advance reading. Read at least Sections 1–4 of the following paper before the study group session.


Topics for discussion. Discuss at least the following topics in your group. Prepare to summarize the discussion for members of the other groups.

- The sparse suffix sorting problem. What is the problem of solving it using MSD radix sort?
- The $\ell$-strict compact trie. How does it differ from the standard trie?
- The main ideas of the algorithm in Section 4.

You may also discuss additional topics, for example:

- The algorithm in Section 4 in more detail.
Group D: Comparison-driven Data structures for Strings

Members

- Jääsaari, Elias
- Lehtola, Paula
- Mesimäki, Jerry
- Niskanen, Andreas
- Saitkulov, Marat
- Söderholm, Marcus
- Zhou, Pengyuan
- Zhukova, Bella

Advance reading. Read at least Section 2 of the following paper before the study group session.


Topics for discussion. Discuss at least the following topics in your group. Prepare to summarize the discussion for members of the other groups.

- The $DS_{lcp}$ list. How is it related to the lcp-comparison technique on the lectures?
- Consider lookup, insertion and deletion in a balanced binary tree with string keys. What is the difference with and without the $DS_{lcp}$ list?

You may also discuss additional topics, for example:

- The implementation of $DS_{lcp}$ list (Section 3).