

20SK – Signals and Codes

Lecture 10x – Dictionary coders (2015/12/04)

Topics discussed:

- Dictionary-based compression schemes in general
- RLE
- Lempel-Ziv (LZ77) source coding
- LZW

The relevant literature is [1,2] for LZ77 and [3] for LZW. For more insight into data compression methods see also books by David Salomon [4,5]. Some relevant information can be also found in Wikipedia and other online sources.

Resources

- [1] Shor, P.: *Lempel-Zip notes* [online]. MIT, 2005. Available from: http://www-math.mit.edu/~shor/PAM/lempel_ziv_notes.pdf
- [2] Ziv, J., Lempel, A.: *A Universal Algorithm for Sequential Data Compression*. IEEE Transactions on Information Theory 23 (3), 1977, pp. 337–343. doi:10.1109/TIT.1977.1055714.
- [3] Welch, T.: *A Technique for High-Performance Data Compression*. Computer 17 (6), 1984, pp. 8–19. doi: 10.1109/MC.1984.1659158.
- [4] Salomon, D.: *Concise Introduction to Data Compression*. London: Springer Verlag, 2008, 311 pp.
- [5] Salomon D., Motta G.: *Handbook of Data Compression*. London: Springer Verlag, 2010, 1360 pp. doi: 10.1007/10.1007/978-1-84882-903-9