

Annotated Bibliography

1. REFERENCES

- [FFFM13] Bettina Fazzinga, Sergio Flesca, Filippo Furfaro, and Elio Masciari. Rfid-data compression for supporting aggregate queries. *ACM Trans. Database Syst.*, 38(2):11:1–11:45, July 2013.

RFID chips are becoming used more and more for tracking objects in various applications. This results in huge numbers of readings, so Fazzinga suggests a compression algorithm to effectively transmit data. He proposes a form of lossy compression that provides a estimation of the data, instead of transmitting an overwhelmingly large amount of information. He shows an experiment in which the technique provides a reasonable level of efficiency and accuracy.

- [LH87] Debra A. Lelewer and Daniel S. Hirschberg. Data compression. *ACM Comput. Surv.*, 19(3):261–296, September 1987.

Lelewer explains that the concept of data compression is when information is stored in as little space as possible. In this survey paper, she provides an overview of various compression techniques, such as Shannon-Fano code, Static Huffman coding, Lemmel-Ziv codes, and many others. Lelewer also explains that the effectiveness of a compression algorithm can be measured based on what percentage of the data can be reduced, referred to as the compression factor. Using this tool,

she evaluates of effectiveness of the techniques discussed.

- [Man97] Udi Manber. A text compression scheme that allows fast searching directly in the compressed file. *ACM Trans. Inf. Syst.*, 15(2):124–136, April 1997.

Manber proposes a new method of compressing text that allows string matching to be performed within a compressed file. Previously, text would need to be uncompressed to perform similar searches. This allows for around a 30% reduction in the time to search it. This technique is applicable to files that are searched often, such as catalogs and address books.

- [MEMS06] Rafał Mantiuk, Alexander Efremov, Karol Myszkowski, and Hans-Peter Seidel. Backward compatible high dynamic range mpeg video compression. *ACM Trans. Graph.*, 25(3):713–723, July 2006.

Mantiuk explains that there is a transition occurring from low contrast video (LDR) to the high quality high dynamic range (HDR) video. He proposes a function that can convert a stream of HDR video into an LDR stream to ensure backwards compatibility. He explains that the HDR compression method only adds a 30% overhead to the size of the video. It does not modify the appearance of either LDR or HDR video. Finally, he compares his compression method to lossy methods, showing that his lossless technique produces significantly higher quality images.

- [MPSR05] Ketan Mayer-Patel, Brian C. Smith, and Lawrence A. Rowe. The Berkeley software mpeg-1 video decoder. *ACM Trans. Multimedia Comput. Commun. Appl.*, 1(1):110–125, February 2005.

Patel describes how the MPEG-1 decoder works. He explains that MPEG-1 was widely used in everywhere from research to entertainment. He explores the

strengths and weaknesses of the decoder, and compares its performance results from 1993 with its effectiveness run on modern processors, to demonstrate the progress that has occurred over past years.