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Context tree weighting



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The **context tree weighting method (CTW)** is a [lossless compression](#) and prediction algorithm by [Willems, Shtarkov & Tjalkens 1995](#). The CTW algorithm is among the very few such algorithms that offer both theoretical guarantees and good practical performance (see, e.g. [Begleiter, El-Yaniv & Yona 2004](#)). The CTW algorithm is an “ensemble method,” mixing the predictions of many underlying variable order [Markov models](#), where each such model is constructed using zero-order conditional probability estimators.

References [\[edit\]](#)

- Willems; Shtarkov; Tjalkens (1995), *The Context-Tree Weighting Method: Basic Properties* **41**, IEEE Transactions on Information Theory
- Begleiter; El-Yaniv; Yona (2004), *On Prediction Using Variable Order Markov Models*  (PDF) **22**, Journal of Artificial Intelligence Research: *Journal of Artificial Intelligence Research*, pp. 385–421

External links [\[edit\]](#)

- [Relevant CTW papers and implementations](#) 
- [CTW Official Homepage](#) 

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Lossless	Entropy type	Unary · Arithmetic · Golomb · Huffman (Adaptive · Canonical · Modified) · Range · Shannon · Shannon–Fano · Shannon–Fano–Elias · Tunstall · Universal (Exp-Golomb · Fibonacci · Gamma · Levenshtein)	
	Dictionary type	Byte pair encoding · DEFLATE · Lempel–Ziv (LZ77 / LZ78 (LZ1 / LZ2) · LZJB · LZMA · LZO · LZRW · LZS · LZSS · LZW · LZML · LZX · LZ4 · Statistical)	
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