

Functional data structures: Additional Web Material

The most well known and widely cited work on purely functional data structures is Chris Okasaki's work from "[Purely Functional Data Structures](#)". This is available in Chris Okasaki's thesis and also as a [book](#). The very notion of "purely functional" is covered on [Wikipedia](#) and in many other places on the web.

Okasaki's work is an excellent systematic exploration of how to implement advanced data structures in a purely functional way. However, the actual data structures used don't tend to find as greater application in F# programming as the reader may expect, though when needed they are indispensable

One of the most interesting functional-like data structures to find widespread application in functional programming in recent years is the "rope". A [tutorial introduction in Ruby](#) can be found here. For a detailed discussion of this data structure, see H.-J. Boehm, R. Atkinson, and M. Plass, "Ropes: An Alternative to Strings", *Software Practice and Experience* **25**(12):1315, 1995. Ropes were [used widely](#) in entries in the 2007 [ICFP programming competition](#).

The famous book [Structure and Interpretation of Computer Programs](#) has discussions of several purely functional data structures.

An implementation of purely functional streams (infinite sequences) is [discussed here](#).