Data structures are everywhere in computer software. Classical data structures are specially designed to make each individual operation fast. A more flexible approach is to design the structure so that it adapts to its use. This idea has produced data structures that perform well in practice and have surprisingly good performance guarantees. In this talk I’ll review some recent work on such data structures, specifically the splay tree, a self-adjusting binary search tree, and the SLIM HEAP, a self-adjusting priority queue.

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