Have you ever wondered how to represent a binary search tree on n nodes as a set of n points in 2D? Today's lecture will reveal a surprising new (2009) such connection, which provides an approach to tackling the venerable dynamic optimality conjecture.

The dynamic optimality conjecture is one of the oldest and biggest open problems in data structures, asking a fundamental question: is there one best binary search tree? Traditional wisdom is that "splay trees" are such a tree (up to constant factors), but we'll see a new "greedy" tree data structure that we think is more obviously best—though we still can't prove it.

Dynamic optimality remains an active and exciting area of research, and this lecture and the next focus on the current state-of-the-art.

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