

In this lecture, we continue (and finish) the theme of geometric data structures.

First, we'll finish our coverage of fractional cascading from Lecture 3 by illustrating a really cool application: 3D orthogonal range searching in $O(\log n)$ time. This gives us the second log factor improvement mentioned in Lecture 3, giving $O(\log^{d-2} n)$ for d dimensions.

Second, we'll cover a style of data structures for *moving* data, e.g., where 2D points move at known velocity and acceleration. Although the main study here is in 2D (and 3D), we'll focus on two 1D problems that are well-understood and fit in a lecture: kinetic predecessor and kinetic priority queues.

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