The **Hilbert curve** (also known as the **Hilbert space-filling curve**) is a [continuous](https://en.wikipedia.org/wiki/Geometric_continuity) [fractal](https://en.wikipedia.org/wiki/Fractal_curve) [space-filling curve](https://en.wikipedia.org/wiki/Space-filling_curve) first described by the German mathematician [David Hilbert](https://en.wikipedia.org/wiki/David_Hilbert) in 1891,[[1]](https://en.wikipedia.org/wiki/Hilbert_curve#cite_note-1) as a variant of the space-filling [Peano curves](https://en.wikipedia.org/wiki/Peano_curve" \o "Peano curve) discovered by [Giuseppe Peano](https://en.wikipedia.org/wiki/Giuseppe_Peano) in 1890.[[2]](https://en.wikipedia.org/wiki/Hilbert_curve#cite_note-2)

Because it is space-filling, its [Hausdorff dimension](https://en.wikipedia.org/wiki/Hausdorff_dimension" \o "Hausdorff dimension) is 2 (precisely, its image is the unit square, whose dimension is 2 in any definition of dimension; its graph is a compact set homeomorphic to the closed unit interval, with Hausdorff dimension 2).

The Hilbert curve is constructed as a limit of [piecewise linear curves](https://en.wikipedia.org/wiki/Piecewise_linear_curve). The length of the {\displaystyle n}th curve is {\displaystyle \textstyle 2^{n}-{1 \over 2^{n}}}, i.e., the length grows exponentially with {\displaystyle n}, even though each curve is contained in a square with area {\displaystyle 1}.

