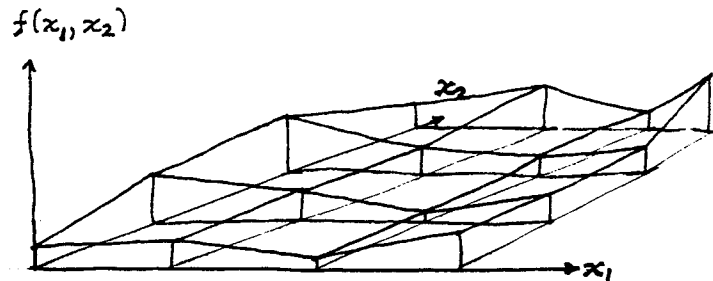


Neil E. Cotter

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Interpolation methods approximate surfaces by splitting them into sections and assigning a simple function - a straight line, a plane, or a low-order polynomial - to each section.



In this illustration we have divided the domain of (x_1, x_2) values into squares. Inside each square we have used linear interpolation in two dimensions.

Interpolation algorithms have two major components:

- 1) An algorithm for identifying which section the input values (x_1, x_2) lie within, and
- 2) An interpolation function for computing $f(x_1, x_2)$ within the section identified in step (1).

Each section may have a different interpolation function, but it is desirable to have adjoining sections return the same $f(x_1, x_2)$ values along their common boundary. In other words, we desire a continuous function $f(x_1, x_2)$.