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27 Mar 1994

The triangulation method illustrated on the next page is identical to the method used by surveyors to make maps: it approximates a surface with a set of triangular facets.

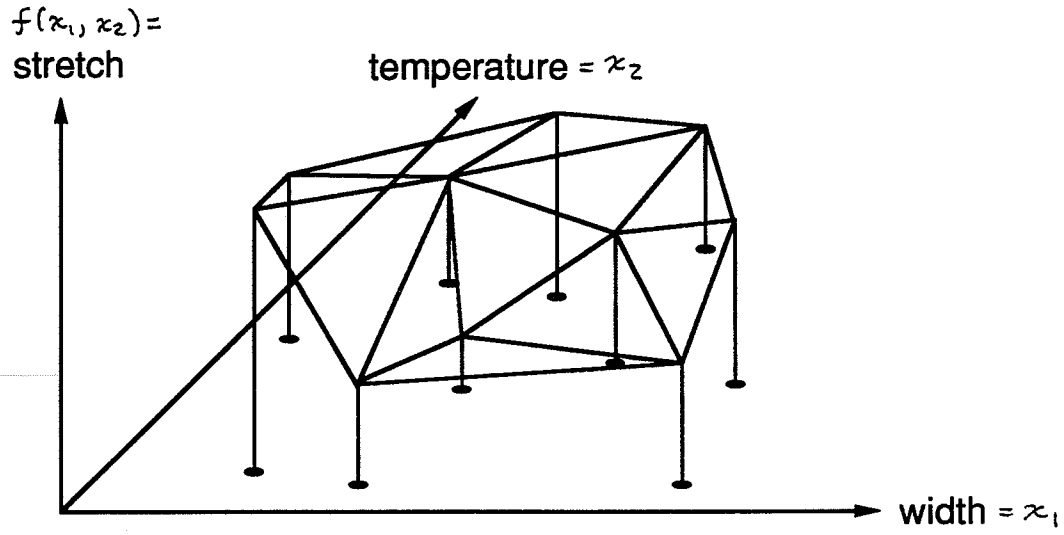
Each facet is flat and may be thought of as a local planar approximation. We require that the triangles meet at their edges, however.

The major advantage of triangulation is that it applies to situations where measured data is randomly scattered over the domain of inputs (x_1, x_2). In practical cases we often have to use whatever measured data is available to us.

The major disadvantage of triangulation is the difficulty of determining which triangle our input point (x_1, x_2) lies in. This is a problem for all algorithms that accept irregularly spaced data points.

Function Approximations – Interpolation –

Triangulation (cont.)



This example illustrates a hypothetical surface for predicted how much the housing of a mill will stretch when rolling a steel bar of width = x_1 and temperature = x_2.