



Why

Since the function space $\mathbf{R} \rightarrow \mathbf{R}$ is a vector space, can we approximate a “complex” element of this set by some basis of “simpler” functions in $\mathbf{R} \rightarrow \mathbf{R}$.

Of course, there may be no set that can represent f . So instead we may be interested in an element $g \in \mathbf{span}\{g_1, \dots, g_d\}$ which approximates f .¹

Definition

A *real function approximator* for a function $f : \mathbf{R} \rightarrow \mathbf{R}$ is a function $g : \mathbf{R} \rightarrow \mathbf{R}$.

¹Future editions will modify.

