# Nearest Neighbor Predictors

## 1 Why

We might expect similar precepts to lead to similar postcepts.

## 2 Definition

Consider a set of precepts. We call a real-valued function on ordered pairs of precepts that is nonnegative and zero when applied to the a pair of the same precept a similarity function.

### 2.1 Notation

Let $n$ be a natural number. Let $\Xi$ be a length $n$ paired record sequence in $\mathcal{U} \times \mathcal{V}$; so

$$\Xi = ((u^1, v^1), \ldots, (u^n, v^n))$$

with $u^i \in \mathcal{U}$ and $v^i \in \mathcal{V}$ for $i = 1, \ldots, n$.

The nearest neighbor induction associates $\Xi$ with the function $f_\Xi$ such that

$$f_\Xi(u) = v^j$$

where $j < n$ is the largest integer such that

$$d(u, u^j) = \min_i \{d(u, u^i)\}.$$