



## Inductors

### 1 Why

We want to talk about learning associations between perceptions in time or space.

### 2 Definition

An *inductor* is a function mapping a dataset of records in a cartesian product of two sets to a function between the two sets. We call the first set the *precepts* and the second set the *postcepts*. We call a function from the precepts to the postcepts a *predictor*. We call the result of a precept under a predictor a *prediction*. An inductor maps datasets to predictors.

#### 2.1 Notation

We introduce no new notation, but rather express the new concepts in the old notation. Let  $A$  and  $B$  be non-empty sets. Let  $D$  be a dataset in  $A \times B$ . Let  $g : A \rightarrow B$ , a predictor, which makes prediction  $g(a)$  on precept  $a \in A$ . Let  $f : (A \times B)^n \rightarrow (A \rightarrow B)$ , an inductor. Then  $f(D)$  is the predictor which the inductor associates with dataset  $D$ .