

Alternate representations of functors

Above I defined functors as quadruples. But a functor can be represented in two other ways:

- as a binary relation $\delta \in \mathcal{P}(\mathcal{P}A \times \mathcal{P}B)$ between sets
- as a function $\alpha: \mathcal{P}A \rightarrow \mathfrak{F}(B)$ from sets to filters

Below I will show the exact conditions required for δ and α in order to represent a functor. Functors from A to B bijectively correspond to such δ and α .