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Fuzzy presheaves

Michael Barr (1986) showed that fuzzy sets can be identified with sheaves of monomorphisms on a locale. The Vietoris-Rips complexes $s \mapsto V_s(X)$ for a data cloud X in topological data analysis form a simplicial fuzzy set, or a simplicial sheaf of monomorphisms on a locale defined by the parameter s . There is an underlying theory of presheaves of monomorphisms (fuzzy presheaves) that will be described in this talk, along with potential applications.