

Two partial topometric maps :

$$\begin{aligned}\mathbf{T} &= (\mathcal{T}_a, \mathcal{T}_b) \\ \mathcal{T}_i &= (N_i, E_i)\end{aligned}$$

embed geometry

Geometric descriptors :

$$\mathbf{F}_a \in \mathbb{R}^{|N_a| \times d}, \mathbf{F}_b \in \mathbb{R}^{|N_b| \times d}$$

contextual embedding

Contextual descriptors :

$$\mathbf{G}_a \in \mathbb{R}^{|N_a| \times d}, \mathbf{G}_b \in \mathbb{R}^{|N_b| \times d}$$

similarity

Similarity matrix :

$$\mathbf{S} \in \mathbb{R}^{|N_a| \times |N_b|}, \mathbf{S}_{ij} = ||\text{row}_i(\mathbf{G}_a) - \text{row}_j(\mathbf{G}_b)||$$

hypothesis growing

Matches :

$$\mathbf{M} \in \{0, 1\}^{|N_a| \times |N_b|}, \mathbf{1}_n^T \mathbf{M} \in \{0, 1\}^n, \mathbf{1}_n \in \{1\}^n$$