Notation	Meaning
$\mathbb{I}$, $\mathbb{E}$	Indoor space, euclidean space
$\mathbb{Q}$, $\mathbb{O}$	a set of query objects, a set of target objects
Q, O	a query object, a target object
$\|Q, O\|_I$	Indoor distance from Q to O
$\|Q, O\|_{minI}$/$\|Q, O\|_{maxI}$	Min/max indoor distance from Q to O
$\|Q, O\|_E$	euclidean distance from Q to O
$\|Q, O\|_{minE}$/$\|Q, O\|_{maxE}$	Min/max euclidean distance from Q to O
$\|Q, O\|_K$	Skeleton distance from Q to O
$a.l$ or $a.u$	lower or upper bound of the value a
$\uparrow A$	the link/pointer to the entity A
$[R_i^-, R_i^+]$	the range for R on dimension i
$D(p)$	doors of partition p
$P(d)$	partitions connected to door d
$P(q)$/$P(O)$	the partition containing point q or object O
$\|O\|$	number of instances belonging to object O
$a \overset{*d}{\rightsquigarrow} b$	a path from a to b with d as the last door
$a \overset{*}{\rightarrow} b$	the shortest path from a to b
$\odot(c, r)$	a circle centered at c with radius r
$\underset{\epsilon}{\ltimes}$	semi-range join
$\underset{k}{\ltimes}$	semi-neighborhood join
$\oplus$	Minkovski sum