V
$V_{min}, V_{max} \in$
R^3
$e_l \in$
R^+
$v =$
$(x, y, z) \in$
Z^{3+}
V
$v_{min} =$
$V_{min}+$
$v*$
e_l
$v_{max} =$
$V_{min}+$
$(v+$
$1)*$
e_l
$v_c =$
$(v_{min}+$
$v_{max})*$
0.5
p
V
$v_p =$
$(p-$
$V_{min})//e_l$
$//$
$\mathcal{V}_{property}:$
$Z^{3+} \mapsto$
R^{m*n}
$v_{V_{min}} =$
$(0, 0, 0)$
$(0, 1, 1)$
$v_{V_{max}} =$
$(V_{max}-$
$V_{min})//e_l$
$\mathcal{V} =$
$\{v_i\}_{i=1}^{n}, n \in$
$[1, \prod v_{V_{max}}]$
$V_{\mathcal{V}}$
e_l
$M_{\mathcal{V}} =$
$\{m_i\}_{i=1}^{|\mathcal{V}|}, m_i <$
$m_{i+1}, m_i \in$
Z^+
n
r
$radius:$
$Z^{3+}, R \mapsto$
$\mathcal{K}_f:$
$\mathcal{K}_w \mapsto$
R^{m*n}
$\mathcal{K}$
$weight:$
$Z^{3+} \mapsto$
$R, v \in$
$\mathcal{K}$
$o_{\mathcal{K}} \in$
Z^3
$\mathcal{K}_v =$
$\{v_{\mathcal{K}}+$
$(v-$
$o_{\mathcal{K}})|v_{\mathcal{K}} \in$
$\mathcal{K}\}$
$\mathcal{K}_w =$
$\{weight(v)*$
$\mathcal{V}_{property}(v)|v \in$
$\mathcal{K}_v \cap$
$\mathcal{V}\}$
$\mathcal{K}_f(\mathcal{K}_w)$
$\mathcal{V}$
$\mathcal{K}$
$\mathcal{V}_{property,\mathcal{K}} =$
$c(\mathcal{V}_{property}, \mathcal{K})$
$\mathcal{K}_{stick}$
$\mathcal{V}_{\mathcal{K}_{stick}} =$
$c(\mathcal{V}, \mathcal{K}_{stick})$
$\mathcal{V}_{unobstructed} =$
$\{v \in$
$\mathcal{V}_{\mathcal{K}_{stick}}|\mathcal{V}_{obstructed}(v) =$
$0\}$
$\mathcal{V}_{dilated}$
$\mathcal{V}_{dilated}$
$\mathcal{V}_c$
$\mathcal{V}$
$\mathcal{V}_c$
$\mathcal{G}_{\mathcal{V}} =$
(V, E)
$\mathcal{V}$
$\mathcal{V}$
$\mathcal{K}$

$r \in$
R
r
$HDF_{max} =$
$\{|$
$dist() \geq$
$max\{dist(v_r \mid$
$v_r \in$
$radius(, r))\}\}$
r
HDF_{max}
HDF_{max}
h
$views =$
$\{v_c +$
$(0, h, 0) \mid$
$v \in$
$HDF_{max}\}$
$views$
$visibility :$
$R, \mapsto$
$Z^{m \times 3}, m \in$
$R, n \geq$
m
$views$
$r_{visibility}$
$visibility_{views} =$
$\{visibility(x) \mid$
$x \in$
$views\}$
$J(A, B) =$
$\frac{|A \cap B|}{|A \cup B|}$
$S^{n \times n} \in$
$[0, 1]$
$J(A, B) =$
$J(B, A)$
$J(A, A) =$
1
$S^{n \times n}$
s
$[1.2, 2.5]$
$visibility_{views}$
$\mathbf{C}_{visibility} =$
$\{c_0, c_1, \dots c_{n-1}, c_n\}, n =$
$|views|, c \in$
$, n \geq$
c
n
$\mathbf{C}_{visibility}$
n
$visibility_{views}$
c
$visibility_{views}$
c
$\mathbf{C}_{visibility}$
$\mathcal{V}_c$
$\mathcal{V}$
$room : \mapsto$
$room() =$
$c, c \in$
$\mathbf{C}_{visibility}, \in$
$=$
$(,)$
$=$
(V, E)