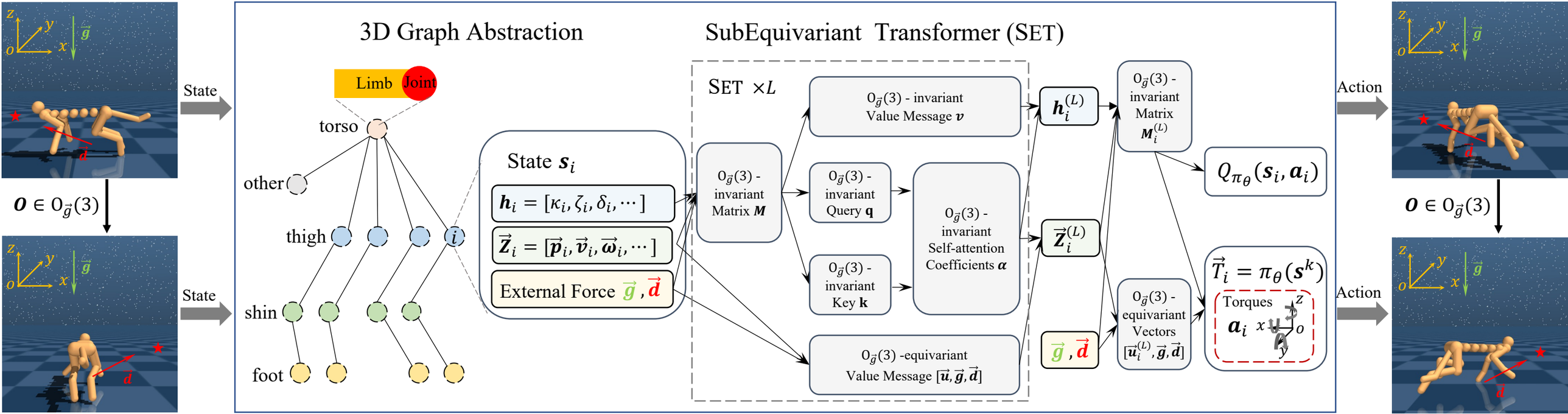
3D Graph Abstraction
SubEquivariant Transformer (SET)
State
Action
Limb
Joint
torso
other
thigh
shin
foot
State s_i
$h_i = [\kappa_i, \zeta_i, \delta_i, \cdots]$
$\vec{Z}_i = [\vec{p}_i, \vec{v}_i, \vec{\omega}_i, \cdots]$
External Force $\vec{g}$, $\vec{d}$
SET $\times L$
$O_{\vec{g}}(3)$ - invariant Matrix M
$O_{\vec{g}}(3)$ - invariant Value Message v
$O_{\vec{g}}(3)$ - invariant Query q
$O_{\vec{g}}(3)$ - invariant Key k
$O_{\vec{g}}(3)$ - invariant Self-attention Coefficients α
$O_{\vec{g}}(3)$ -equivariant Value Message $[\vec{u}, \vec{g}, \vec{d}]$
$h_i^{(L)}$
$\vec{Z}_i^{(L)}$
$\vec{g}$, $\vec{d}$
$O_{\vec{g}}(3)$ - invariant Matrix $M_i^{(L)}$
$O_{\vec{g}}(3)$ - equivariant Vectors $[\vec{u}_i^{(L)}, \vec{g}, \vec{d}]$
$Q_{\pi_\theta}(s_i, a_i)$
$\vec{T}_i = \pi_\theta(s^k)$
Torques
a_i
$O \in O_{\vec{g}}(3)$
$O \in O_{\vec{g}}(3)$