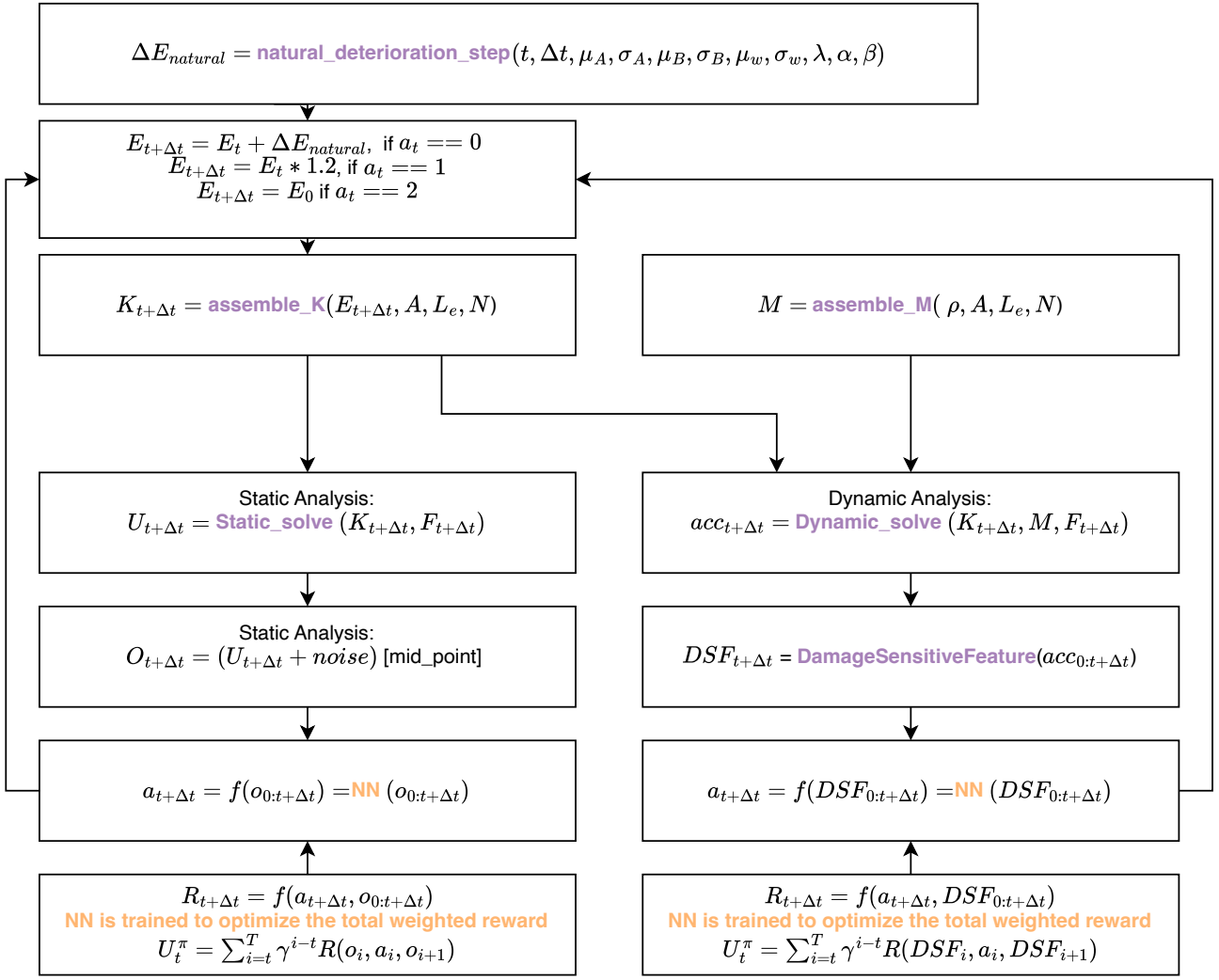
$\Delta E_{natural}$ = natural_deterioration_step$(t, \Delta t, \mu_A, \sigma_A, \mu_B, \sigma_B, \mu_w, \sigma_w, \lambda, \alpha, \beta)$
$E_{t+\Delta t} = E_t + \Delta E_{natural}$, if $a_t == 0$
$E_{t+\Delta t} = E_t * 1.2$, if $a_t == 1$
$E_{t+\Delta t} = E_0$ if $a_t == 2$
$K_{t+\Delta t}$ = assemble_K$(E_{t+\Delta t}, A, L_e, N)$
M = assemble_M(ρ, A, L_e, N)
Static Analysis:
$U_{t+\Delta t}$ = Static_solve $(K_{t+\Delta t}, F_{t+\Delta t})$
Dynamic Analysis:
$acc_{t+\Delta t}$ = Dynamic_solve $(K_{t+\Delta t}, M, F_{t+\Delta t})$
Static Analysis:
$O_{t+\Delta t} = (U_{t+\Delta t} + noise)$ [mid_point]
$DSF_{t+\Delta t}$ = DamageSensitiveFeature$(acc_{0:t+\Delta t})$
$a_{t+\Delta t} = f(o_{0:t+\Delta t})$ =NN $(o_{0:t+\Delta t})$
$a_{t+\Delta t} = f(DSF_{0:t+\Delta t})$ =NN $(DSF_{0:t+\Delta t})$
$R_{t+\Delta t} = f(a_{t+\Delta t}, o_{0:t+\Delta t})$
NN is trained to optimize the total weighted reward
$U_t^\pi = \sum_{i=t}^{T} \gamma^{i-t} R(o_i, a_i, o_{i+1})$
$R_{t+\Delta t} = f(a_{t+\Delta t}, DSF_{0:t+\Delta t})$
NN is trained to optimize the total weighted reward
$U_t^\pi = \sum_{i=t}^{T} \gamma^{i-t} R(DSF_i, a_i, DSF_{i+1})$