```
clear all; close all; clc;

grab = 0.025;
stand = 0.1;

T_se_i = [1 0 0 0;
          0 1 0 0;
          0 0 1 1;
          0 0 0 1];

T_sc_i = [1 0 0 1;
          0 1 0 0;
          0 0 1 0;
          0 0 0 1];

T_sc_f = [0 1 0 0;
          -1 0 0 -1;
          0 0 1 0;
          0 0 0 1];

T_ce_g = [0 0 1 0;
          0 1 0 0;
          -1 0 0 grab;
          0 0 0 1];

T_ce_s = [0 0 1 0;
          0 1 0 0;
          -1 0 0 stand;
          0 0 0 1];
k = 3;

configs = trajectoryGenerator(T_se_i, T_sc_i, T_sc_f, T_ce_g, T_ce_s, k);

csvwrite("trajectoryGeneratorTestData.csv", configs);
```

Published with MATLAB® R2021b

```
function configs = trajectoryGenerator(T_se_i, T_sc_i, T_sc_f, T_ce_g, T_ce_s, k)

    T_se_ci_s  = T_sc_i * T_ce_s; % Standoff cube initial
    T_se_cf_s  = T_sc_f * T_ce_s; % Standoff cube final

    T_se_ci_g = T_sc_i * T_ce_g; % Grasp cube initial
    T_se_cf_g = T_sc_f * T_ce_g; % Drop cube initial

    T0 = {T_se_i, T_se_ci_s, T_se_ci_g, T_se_ci_g, T_se_ci_s, T_se_cf_s, T_se_cf_g, T_se_cf_g, T_se_cf_s}; % Inital Configs for every trajectory
    T1 = {T0{2:end}, T_se_i}; % Final Configs for every trajectory

    grip = [0 0 1 1 1 1 0 0 0]; % Final Gripper State at every trajectory
    t = [1 1 1 1 1 1 1 1 1]; % Time for each trajectory

    n = 0; % Precontruct Configs Length
    for i = 1:length(t)
        n = n + t(i)*k/0.01;
    end

    configs = zeros(n, 13);
    index = 1;
    for i = 1:length(T0)
        N = t(i)*k/0.01;
        configs(index:index+N-1, :) = CellTtoConfig(ScrewTrajectory(T0{i}, T1{i}, t(i), N, 5), grip(i));
        index = index+N;
    end
end
```

```
Not enough input arguments.

Error in trajectoryGenerator (line 3)
    T_se_ci_s  = T_sc_i * T_ce_s; % Standoff cube initial
```

Published with MATLAB® R2021b

```
function configs = CellTtoConfig(data, grip)
    configs = zeros(length(data), 13);
    for i = 1:length(data)
        configs(i, :) = TtoConfig(data{i}, grip);
    end
end
```

```
Not enough input arguments.

Error in CellTtoConfig (line 2)
    configs = zeros(length(data), 13);
```

Published with MATLAB® R2021b