```
A = [1.5 0.5;0.5 1.5];
[n,~] = size(A);
x_i = rand(n,1);
while norm(A*x_i/norm(A*x_i) - x_i/norm(x_i)) <= 0.0001
    x_i = rand(2,1);% this is so that we don't get an exact eigen
 vector
end
x_n = zeros(2,1);
err = 1/0;
tol = 0.00001;
e_n = 0;
e_i = 0;
while err >= tol
    x_n = A * x_i;
    e_n = norm(x_n)/norm(x_i);
    err = abs(e_n - e_i)/e_i;
    e_i = e_n;
    x_i = (x_n)/max(abs(x_n)); % scaling
end
e_n;
x_i;
```

Published with MATLAB® R2020a