Solving a Linear System **Ax = b**

(Practice with Applied Math Software MatlabTM)

1. Direct solution methods: Gaussian elimination and LU Decomposition (slu.m, slv.m, splu, splv.m)
2. Complexity analysis (complexity\_analysis.m) with (a) Gaussian elimination (b) Matlab mldivide x = A\b (c) Inverse matrix
3. Iterative solution methods
   1. Jacobi iteration (Jacobi\_amath.m, Jacobi\_fail\_amath.m)
   2. Gauss-Seidel iteration (Gauss\_Seidel\_amath.m)
4. Stability and Convergence with Eigenvalues analysis (GaussSeidel\_Jacobi\_comparision.m, )
5. PCA for face recognition