

5627: HW3

1. LU Decomposition

- 1.1. Write and test your own LU decomposition code without pivoting. Make sure you explain the output format of your code.
- 1.2. Make sure your code dies appropriately if it encounters a near zero pivot.
- 1.3. Make a log-log plot of the timing for your code with an appropriate reference line.

2. Linear Solver

- 2.1. Combine your LU decomposition and Lower Triangular solve into a function “LUSolver[A,b]” that returns the solution of $Ax = b$ for a general matrix A.
- 2.2. Test this code appropriately.
- 2.3. Make a log-log plot of the timing for your code with an appropriate reference line and the timing for a built-in solver on the same graph.