Quiz (7) MCS 471 Jan Verschelde Friday 7 October 2022

Submit your Jupyter notebook with the answers to gradescope by 10:50am.

Fit the data points $(0, 0.449)$, $(1, 0.845)$, $(2, 0.333)$, $(3, -3.63)$ by a quadratic polynomial q in the least squares sense. Do the following:

1. Setup the linear system that must be solved to compute the coefficients of q.
2. Illustrate how the QR decomposition applies to solve the system.
3. Explain the verification of the least squares property of the computed solution.