

Problem 1(3)

MATLAB *lsqnonlin* Implementation

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Non-linear regression is performed on the given data to fit it to the given function using the *lsqnonlin* function in MATLAB. The default stopping criterion of $1e-6$ is used. Initial guess value is (1,1). The values of A_{12} and A_{21} obtained after the implementation are 1.9584 and 1.6892 respectively which agree with the gradient descent implementation with slight discrepancy. Levenberg-Marquardt algorithm is put to use. Refer the plot below that displays this curve fit. Also refer the attached code.

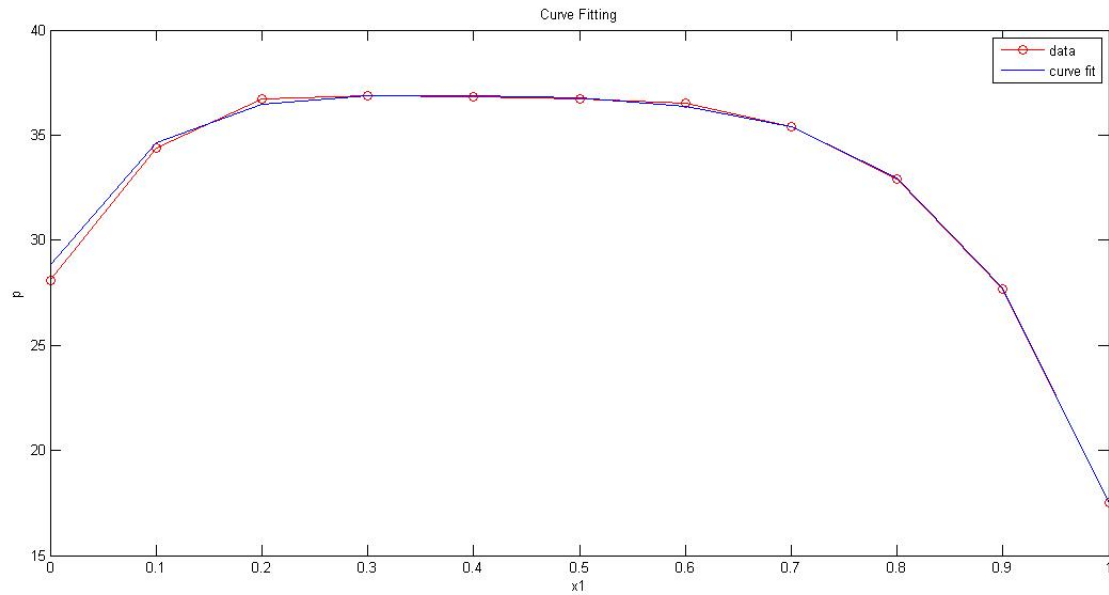


Figure 1: Curve fit