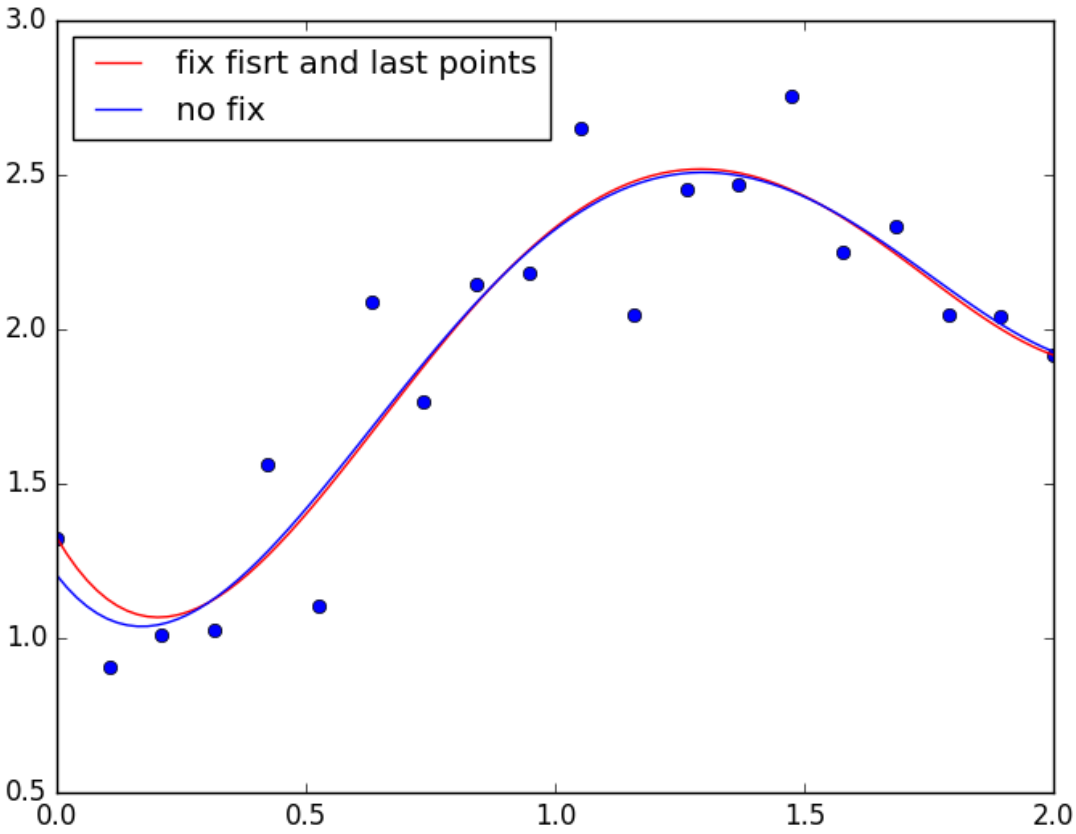
1. Frist Method (Least-Squares of different weight):



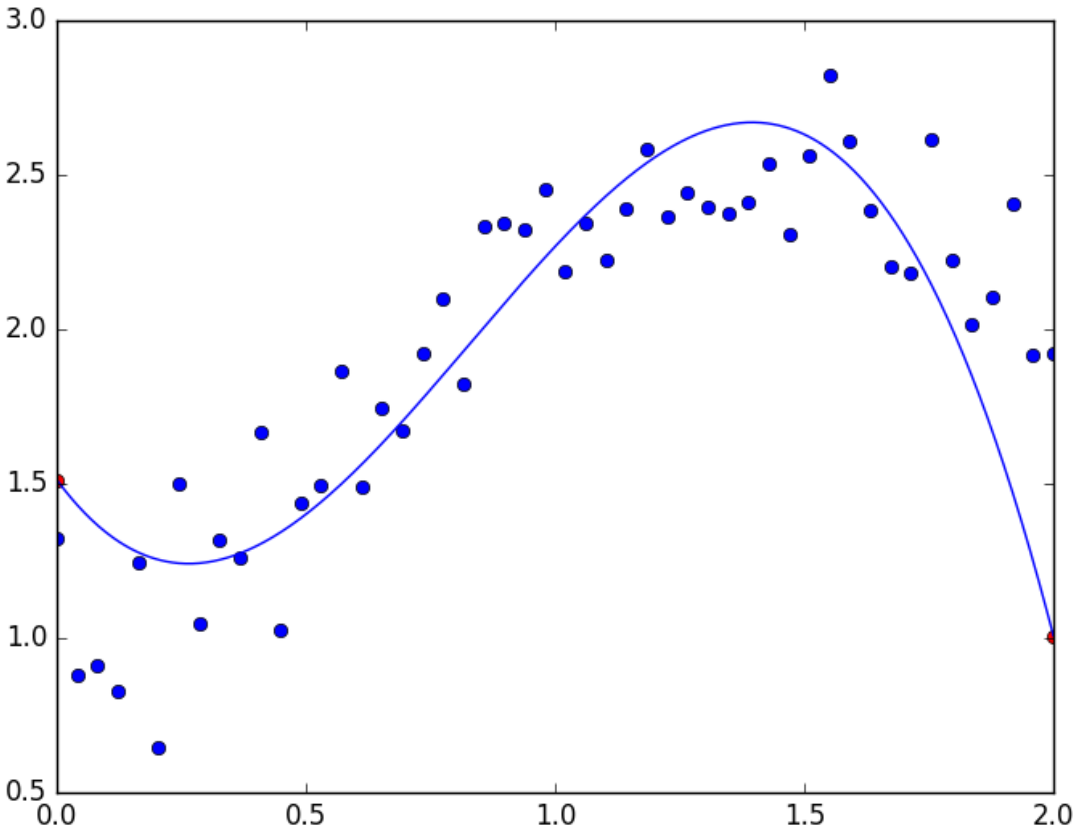
Gaps between true postions and estimated positions:

[-1.70151737e-09 2.13200659e-01 5.82894199e-02 1.01063834e-01
-3.01783237e-01 3.49270969e-01 -4.24853965e-01 1.16438435e-01
-6.42954705e-02 7.30313001e-02 -2.61367118e-01 4.33974843e-01
6.18798111e-02 3.85966324e-02 -3.04436898e-01 1.08990259e-01
-9.08017694e-02 7.06520371e-02 -3.98460040e-02 3.21449978e-10]

We can give the first and the last point a very little weight to make them infinitely close to the true value, but it's not certainly to be exact. It depends on the tolerance we can have.

2. Second Method (Lagrange Multipliers with equation constraint)

In theory, the equation is strictly solved. However, in computer science, it's rarely true.



Gaps between true postions and estimated positions(first and last):
(-1.3322676295501878e-15, 3.7747582837255322e-15)
This method is not until well implemented.