Principles of Optimal Design - Second Edition
ERRATA
August 20, 2004

1. Page xix, Last line :
   "infimum" instead of "infinum"

2. Page xx, Line 8 from the bottom insert :
   $\approx$ approximately equal.

3. Page 50
   Equation (2.20) should read :

$$\begin{pmatrix} m & \sum_{i=1}^{m} x_i & \sum_{i=1}^{m} x_i^2 & \cdots & \sum_{i=1}^{m} x_i^n \\ \sum_{i=1}^{m} x_i & \sum_{i=1}^{m} x_i^2 & \sum_{i=1}^{m} x_i^3 & \cdots & \sum_{i=1}^{m} x_i^{n+1} \\ \vdots & \vdots & \vdots & \vdots & \vdots \\ \sum_{i=1}^{m} x_i^n & \sum_{i=1}^{m} x_i^{n+1} & \sum_{i=1}^{m} x_i^{n+2} & \cdots & \sum_{i=1}^{m} x_i^{2n} \end{pmatrix} \begin{pmatrix} a_0 \\ a_1 \\ \vdots \\ a_n \end{pmatrix} = \begin{pmatrix} \sum_{i=1}^{m} y_i \\ \sum_{i=1}^{m} x_i y_1 \\ \vdots \\ \sum_{i=1}^{m} x_i^n y_i \end{pmatrix}$$

4. Page 54
   Replace Figure 2.7 with the one below that distinguishes the curves better.

5. Page 55
   Equation (2.28) should read :

$$\hat{y}(x) = \beta + \mathbf{r}^T(x)\mathbf{R}^{-1}(\mathbf{y} - \beta\mathbf{1})$$

6. Page 55, Line 20
   "$\cdots$ values are found by" should be "$\cdots$ values $\hat{y}(x)$ are found by".

7. Page 57:
   Figure caption "(a,b) actual function, (c,d) kriging metamodel" should be replaced by "(a,c) actual function, (b,d) kriging metamodel".

8. Page 88
   Last sentence should be corrected to "... by requiring the arguments of all infima to be in $\mathcal{P}$."

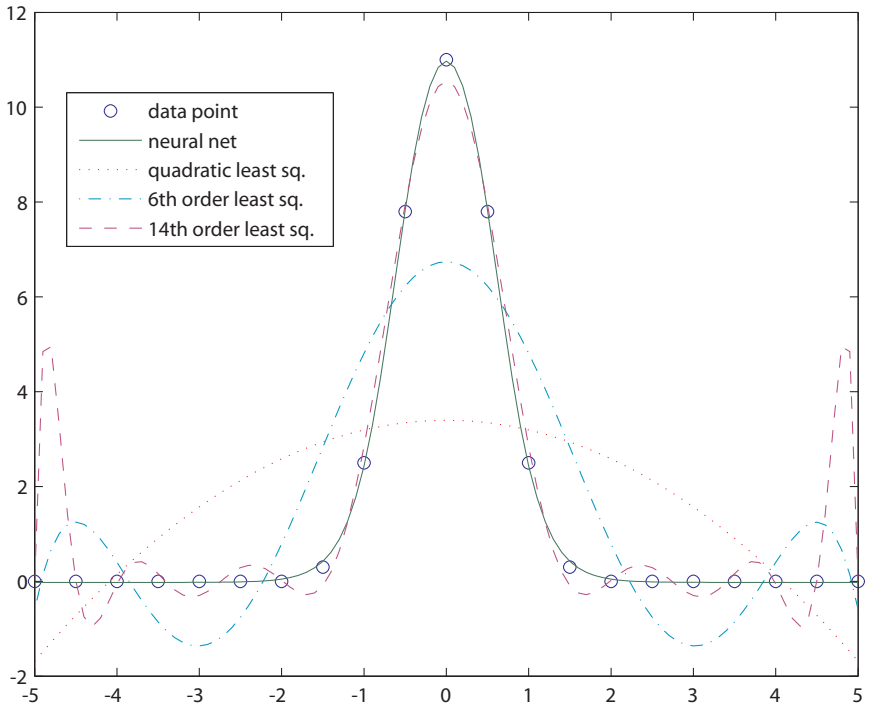


Figure 2.7: A neural net model and three different-order polynomial models for the same data

9. Page 93
   Second to last line: "Let $\mathbf{x} = (x_1, \mathbf{X}_1)^T$..." should be changed to "Let $\mathbf{x} = (x_1, \mathbf{X}_1^T)^T$..."

10. Page 99, Line 27 :
    "throughtout" should be changed to "throughout".

11. Page 125, Line 15 :

    $\frac{(10)^3 x_4 v_1}{1-\gamma}\left(v_2^{1-\gamma} - v_1^{1-\gamma}\right) \geq W_{min}$ should be replaced by $\frac{(10)^3 x_4 v_1^{\gamma}}{1-\gamma}\left(v_2^{1-\gamma} - v_1^{1-\gamma}\right) \geq W_{min}$

12. Page 132
    Use curly bracket on right hand side of Equation (4.7):

$$f(x) = \begin{cases} e^{-1/x^2}, & x \neq 0 \\ 0, & x = 0 \end{cases} \qquad x \in \Re$$

13. Page 133, Line 19 :
    Replace $\nabla f_{\mathbf{x}}$ with $\nabla_{\mathbf{x}} f$.

14. Page 135
    Second to last line of Example 4.2: last symbol in parenthesis should be $8\partial x_2^2$

15. Page 137, Equation (4.24) :
    Replace

$$\partial f = \sum_{i=1}^{n} \frac{\partial f(\mathbf{x}_*)}{\partial x_i} \partial x_i \geq 0$$

    with

$$\partial f = \sum_{i=1}^{n} \frac{\partial f(\mathbf{x})}{\partial x_i} \partial x_i \geq 0$$

16. Page 146, Line 4 :
    Replace $f(\mathbf{x}_1) \leq c$ with $f(\mathbf{x}) \leq c$.

17. Page 161, Equation (4.66) :
    Replace $\mathbf{s}_k = -\mathbf{H}_k \mathbf{g}_k \quad$ if $||\mathbf{H}_k \mathbf{g}_k|| < \Delta$ with $\mathbf{s}_k = -\mathbf{H}_k^{-1} \mathbf{g}_k \quad$ if $||\mathbf{H}_k^{-1} \mathbf{g}_k|| < \Delta$.

18. Page 162, Equation (4.67) :
    Replace $\mathbf{s}_k = -(\mathbf{H}_k + \mu \mathbf{I}) \mathbf{g}_k$ with $\mathbf{s}_k = -(\mathbf{H}_k + \mu \mathbf{I})^{-1} \mathbf{g}_k$.

19. Page 162, Line 8 :
    Replace $\mathbf{s}_k = -(\mathbf{H}_k + \mu \mathbf{I}) \mathbf{g}_k$ with $\mathbf{s}_k = -(\mathbf{H}_k + \mu \mathbf{I})^{-1} \mathbf{g}_k$.

20. Page 169, Line 3 :
    Delete the word "there".

21. Page 169, Figure 5.1 :
    x_l and x_u should be replace by x_L and x_U

22. Page 172, Line 20 :
    Sentence should read "Indeed it represents the surface of a sphere in 3-D space."

23. Page 191, Line 2 and Line 7 :
Replace $-\mathbf{P}_k \nabla f_k$ with $-\mathbf{P}_k \nabla f_k^T$.

24. Page 203, Line 14 :
"in equalities" should read "inequalities".

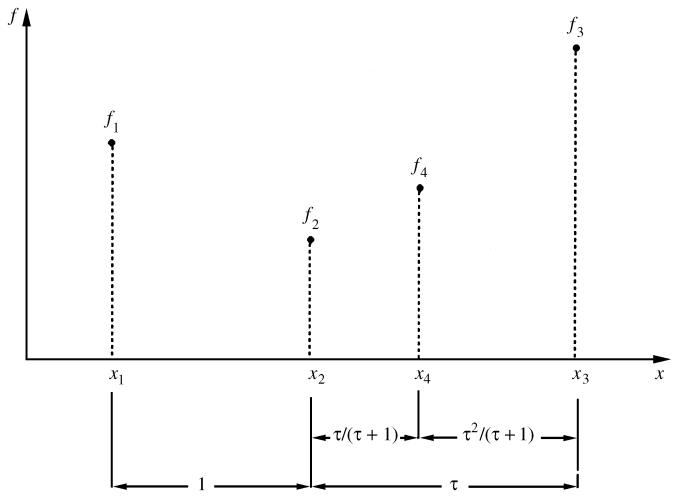
25. Page 218, Line 20 :
Sentence should read "Apply the optimality conditions and monotonicity rules at the optimal solution found".

26. Page 235
In Table 6.6 the entry is second column and second row should read $(4/\pi)F/i^2 - P \leq 0$.

27. Page 320
Line 6 :
Replace "$\lambda_0 = 2.88,\ \mu_0 = 0$" with "$\lambda_1 = 2.88, \mu_1 = 0$".

Line 8 - 11 should read :
"$\phi_0(\mathbf{x}, \lambda, \mu) = f_1(\mathbf{x}) + w_1|h_1| + w_2|\min\{0, -g_1\}|$
where $w_1 = |\lambda_0| = 0, w_2 = |\mu_0| = 0$, and so the merit function reduces to just the objective function. Then the step size is found from"

28. Page 332
The Golden section line search figure of Problem 7.10 should be replaced by the one below :



29. Page 333, Line 8 :
    $[x_2, x_3]$ should read $[x_4, x_3]$.

30. Page 387, Column 1, Line 44 :
    113 should read 133.