Page 22. About the gradient in Eq. (1.23),

$$\nabla f = \begin{bmatrix} \partial f/\partial x_1 \\ \partial f/\partial x_n \\ \vdots \\ \partial f/\partial x_n \end{bmatrix}$$

where the second entry should be $\partial f/\partial x_2$.

Page 48. About the gradient descent formula in Eq. (2.16a),

$$\mathbf{x}_{k+1} = \mathbf{x}_k - \gamma(\mathbf{A}\mathbf{x}_k - \mathbf{b})$$

should be

$$\mathbf{x}_{k+1} = \mathbf{x}_k - \gamma(\mathbf{A}\mathbf{x}_k + \mathbf{b})$$

Page 50. About the gradient descent update in Eq. (2.19),

$$\mathbf{x}_{k+1} = \mathbf{x}_k - \gamma \nabla f(\mathbf{x}_k) + \beta_k \mathbf{v}_k$$
$$\mathbf{v}_{k+1} = \beta \mathbf{v}_k - \gamma \nabla f(\mathbf{x}_k)$$

where the hyper-parameter β_k should be β.
In my mind, this equation could be simplified as follows,

$$\mathbf{v}_{k+1} = \beta \mathbf{v}_k - \gamma \nabla f(\mathbf{x}_k)$$
$$\mathbf{x}_{k+1} = \mathbf{x}_k + \mathbf{v}_{k+1}$$

Page 51. Multiplying both sides by Δt^2 and grouping terms, this simplifies as

$$m(\mathbf{x}_{k+1} - 2\mathbf{x}_k + \mathbf{x}_{k+1}) = -\Delta t^2 \nabla f(\mathbf{x}_k) - d\Delta t(\mathbf{x}_{k+1} - \mathbf{x}_k)$$

should be

$$m(\mathbf{x}_{k+1} - 2\mathbf{x}_k + \mathbf{x}_{k+1}) = -\Delta t^2 \nabla f(\mathbf{x}_k) - \delta\Delta t(\mathbf{x}_{k+1} - \mathbf{x}_k)$$

This typo also appears in the left-hand side:

$$(m + d\Delta t)\mathbf{x}_{k+1} = \cdots$$

which should be

$$(m + \delta\Delta t)\mathbf{x}_{k+1} = \cdots$$