Errata for *Probabilistic Graphical Models: Principles and Techniques,* Daphne Koller and Nir Friedman, The MIT Press 2009, first printing

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- Page 41, exercise 2.17, should read $K = |Val(X)|$. (Found by Joel Pfeiffer.)
- Page 41, exercise 2.19(a), should read $I_P(X;Y \mid Z) = H_P(X \mid Z) - H_P(X|Y,Z)$. (Found by Joel Pfeiffer.)
- Page 53, Figure 3.4, table for *Grade* is incorrect, should read i^1, d^0 in the third row and i^1, d^1 in the fourth row. Table for *Letter* should read g^3 in the third row.
- Page 53, Line -7, should read read 50 percent.
- Page 61, Equation 3.15, should read "=" instead of "==".
- Page 96, Exercise 3.2c., is confusing, probably should read something along the lines of "...that is, can be written as $\sum_{n=1}^{n} \alpha_i x_i + \alpha_0$ (where $Val(X_i) = \{0,1\}$ for $i = 1, \ldots, n$)."
- Page 120, Example 4.5, Line 1 should read "... over $\mathcal{X} = \{X_1, \ldots, X_n\}$; let $\mathcal{X}' = \{X_1', \ldots, X_n'\}$. ..."
- page 127 Box 4.D line 3: to each X_i a '**label**' in the space V. (Found by Gaurav Srivastava.)
- page 128 Figure 4.10: Some entries are sign-wrong. $\epsilon_1\left(a^0, b^1\right) = -1.61$, $\epsilon_1\left(a^1, b^1\right) = -2.3$, $\epsilon_2\left(a^1, b^1\right) = -4.61$. (Found by Gaurav Srivastava.)
- page 171 Example 5.14: $\left(J \perp_c L|a^0, s^1\right) \rightarrow \left(J \perp_c L|a^1, s^1\right)$. (Found by Gaurav Srivastava.)
- page 248 Equation above (7.2), second line, instead of $-2\boldsymbol{x}^T J\boldsymbol{u}$ should read $-2\boldsymbol{x}^T J\boldsymbol{\mu}$. (Found by Rob Gevers.)
- page 259 Exercise 7.7 contains three typos (found by several students)
  1. Conditional covariance is usually defined without integrating out the covariate, $Cov_p[X_i; X_j \mid \boldsymbol{Z}] = E_p[(X_i - E[X_i \mid \boldsymbol{Z}])(X_j - E[X_j \mid \boldsymbol{Z}])]$. If covariate is to be integrated out, the expression for the first equation should then be
  $$Cov_p[X_i; X_i \mid \boldsymbol{Z}] = E_{p(\boldsymbol{Z})} E_{p(X_i, X_j|\boldsymbol{Z})}[(X_i - E[X_i \mid \boldsymbol{Z}])(X_j - E[X_j \mid \boldsymbol{Z}])].$$
  2. Second equation should read $\rho_{i,j} = \frac{Cov_p[X_i; X_j \mid \mathcal{X} - \{X_i, X_j\}]}{\sqrt{Var_p[X_i \mid \mathcal{X} - \{X_i, X_j\}] Var_p[X_j \mid \mathcal{X} - \{X_i, X_j\}]}}$.
  3. Third equation should read $\rho_{i,j} = -\frac{J_{i,j}}{\sqrt{J_{i,i} J_{j,j}}}$.
- page 312 Example 9.3 provides neither the correct ordering nor follows it. (Found by Bunyamin Sisman.)

- page 346 Example 10.1, line 3, "factor $\tau_3(G, S)$" should read "message $\tau_3(G, S)$." (Found by Ryan Rossi.)
- page 373 10.4 *Constructing a clique tree*; Figure 10.9 *A clique tree for the modified Student BN*: the rightmost sepset should not be G, L, but should be L, S.
- page 375 Clique tree construction, item 3 first word should be "Find".
- page 390 Fixed-point characterisation of Belief Propagation, Lagrange multiplier λ_i should be

$$\lambda_i = \frac{1}{2}\|Nb_i\| - 1$$

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- page 447, Theorem 11.8: $\tau_{i,}$ should be τ_{ij}. So $\delta_{i\to j}[s_{ij}] \propto \exp\{\lambda_{ij} \cdot \tau_{ij}(s_{ij})\}$
- page 785 Section 18.1.2 Paragraph starting with "The second approach", first sentence should read "The second approach is score-based structure learning." (Found by Student.)