Errata

The Errata are followed by Clarifications, which are comments that improve the exposition, but are not out-and-out mistakes.

Title page Adam Shwartz is really with the Technion—Israel Institute of Technology, and Alan Weiss is really with AT&T Bell Labs.

Page 9 line 2 of text there is a mysterious period.

Page 24 equation 13

$$\sup_{\vec{\theta}} \left(\langle \vec{\theta}, \vec{y} \rangle - g(\vec{\theta}) \right) \quad \text{should be} \quad \sup_{\vec{\theta}} \left(\langle \vec{\theta}, \vec{a} \rangle - g(\vec{\theta}) \right)$$

Page 24 last equation

$$\ldots = \ell(\vec{a}). \quad \text{should be} \quad \ldots = -\ell(\vec{a}).$$

Page 65 Exercise 4.16, "Let $\vec{z}_n$ is defined..." should be "Let $\vec{z}_n$ be defined..."

Page 66 equation (4.16), the z_t in the integral should be z_s.

Page 132:

$$S \stackrel{\triangle}{=} \{\vec{r} : \vec{r}(-T) = \vec{q},\ \vec{r}(t) \in G^o \text{ for } t < T,\ \vec{r}(0) \in \partial G,\ T > 0\}, \tag{6.4}$$

has the wrong range of time. It should be

$$S \stackrel{\triangle}{=} \{\vec{r} : \vec{r}(-T) = \vec{q},\ \vec{r}(t) \in G^o \text{ for } -T < t < 0,\ \vec{r}(0) \in \partial G,\ T > 0\}, \tag{6.4}$$

Page 133:

In Assumption 6.5, note that G is closed by definition, so that it should begin

Assumption 6.5. There is a point $\vec{q} \in G^o$ and, for every $\varepsilon > 0$, ...

Page 147 The right-hand side of the second equation should be $I^* - \delta$, not $I^*(G) - \delta$.

Page 148 Line 4, the phrase "right-hand side of (6.19)" should be "left-hand side of (6.19)."

Page 156 Equation (6.29) should be

$$\begin{aligned} \mathbb{P}_{\vec{x}} \left(\tau_n(G) \geq T e^{n(I^*+2s)} \right) \leq (2/e)^{\exp(n(s-\delta))} \\ + \exp\left(n(I^* + s) - C_1 e^{n(s-\delta)} + C_2 \right) \end{aligned} \tag{6.29}$$

Also, 5 lines from the bottom of the page, the definition of t should be $t = T e^{n(I^*+2s)}$.

Page 251 The last line of Exercise 9.10 is missing a 2 in the denominator:

$$\ell(a) \approx (a - \mu)^2/(2\sigma^2). \qquad \spadesuit$$

Page 259 The first equation of Example 10.4,

$$\ell(0) = -\log\left(\frac{1}{2} K^{\frac{1}{K+1}} (1 + \ frac 1K) \right).$$

should obviously be

$$\ell(0) = -\log\left(\frac{1}{2}K^{\frac{1}{K+1}}\left(1+\frac{1}{K}\right)\right).$$

Page 264: The equations below the statement of Corollary 11.1 are a bit messed up with respect to "T" and "t". The pair of equations

$$\varphi_t(x,y) \stackrel{\triangle}{=} \inf_{F(x,y,t)} I_0^T(r)$$

(see Definitions 6.14) where

$$F(x,y,t) = \big\{r \ : \ r(0) = x,\ r(t) = y,\ t > 0\big\}.$$

should be

$$\varphi_t(x,y) \stackrel{\triangle}{=} \inf_{F(x,y,t)} I_0^t(r)$$

for $t > 0$ (see Definitions 6.14) where

$$F(x,y,t) = \big\{r \ : \ r(0) = x,\ r(t) = y\big\}.$$

Page 350 Second line below Section 13.6, "verity" should be "verify."

Page 517 Equation (C.3) should read

$$f(r(t), r'(t)) - r'(t)\frac{\partial}{\partial r'}\ f(r(t), r'(t)) = \text{constant.} \qquad (C.3)$$

Page 532 Just below Theorem D.11, ". . .if is possible" should be ". . .it is possible"

Clarifications

Page 154 We are using the inequality

$$\mathbb{P}(A \cap B) \le \mathbb{P}\left(A \,\middle|\, B\right).$$

Page 273 The second part of equation (11.18):

$$\begin{cases} \ell_f(y) & \text{if } x > 0 \text{ or } y \neq 0\ ; \\ \dots \end{cases}$$

Note that a priori we allow paths to take negative values—their cost is infinite. Therefore the local rate function should be infinite for $x = 0$ if $y < 0$. However, this doesn't matter, since the cost of any absolutely continuous path doesn't depend on the cost at $x = 0$ and $y < 0$, since this must be a set of measure 0. The equation could be written, if you like,

$$\begin{cases} \ell_f(y) & \text{if } x > 0 \text{ or } y > 0\ ; \\ \dots \end{cases}$$

The latest errata sheet may be found at

http://netlib.att.com/netlib/att/math/weiss/LargeDeviations.html.

You can retrieve it by anonymous ftp from

ftp://netlib.att.com/netlib/att/math/weiss/errata.ps.Z