Errata for
"An Introduction to Infinite-Dimensional Differential Geometry"

The list below collects errata and misprints for the first edition of "An Introduction to Infinite-Dimensional Differential Geometry" published by Cambridge University Press.

Special thanks go to Th. O. Rot, S. Stroppel and T. Nilssen who made me aware of many of the errors compiled below. **Last changes: July 25, 2023**

- p.4 Theorem 1.7: Not strictly an error, but add the following to the last sentence: *..., that is, for each pair $x, y \in E, x \neq y$ there exists a continuous linear $\lambda \colon E \to \mathbb{R}$ such that $\lambda(x) \neq \lambda(y)$.*

- p.10 proof of 1.20: $E \times F$ instead of $E_1 \times E_2$ and H should be F.

- p.12 proof of Lemma 1.25, line 5: missing t_n^{-1} between the limit and the bracket.

- p.18 proof of 1.39 line 4 of the proof $V_\phi \colon F \to V_\phi$ should read $V_\phi \cap F_\phi \to V_\phi$. line 8 of the proof $f^{-1}(U_\phi)$ should be $f^{-1}(U_\phi \cap N)$. In this and the next line the spaces F should be F_ϕ.

- p.19 Lemma 1.41 proof of (b) the Formula should read

$$h_\psi \circ h_\phi^{-1}(y) = ... = d(\psi \circ \phi^{-1})(p_\phi; y).$$

- p.20 l.3 in the displayed formula replace v with y.

- p.49 Example 3.3 (b) subscript in the first line should read $\mathbb{R}^n$ not R^n.

- p.62, 3.31.: The definition of the logarithmic derivative should read

$$\delta^\ell(c) \colon [a, b] \to \mathbf{L}(G), \quad t \mapsto T\lambda_{c(t)}^{-1}(\dot{c}(t)).$$

- p.77 Example 3.55: The concrete example is flawed. Instead of $SO_3(\mathbb{R})$ it should be about its cover $SU(2)$. Amend the sentence starting with "Recall..." with "*... the twofold cover $SU(2)$ of $SO_3(\mathbb{R})$ can be identified with the 3-dimensional unit sphere.* Two sentences later the sentence should begin as *Lifting this identification....* Thereafter replace $SO_3(\mathbb{R})$ with $SU(2)$.

- 4.17: S_2 and $S_{U,2}$ are the same map, so S_2 should be relabeled $S_{U,2}$.

- p.123, Exercise 6.1.1 (b) $\overline{\{y \in M \mid h(y) \neq y\}}$ instead of $\overline{\{y \in M \mid h(x) \neq x\}}$.

- p.139, the integral in the statement of 7.2 should be $\int_0^1$ not $\int_a^b$. In the proof it should rather be $\mathrm{En}(q(s, \cdot))$ instead of $\mathrm{En}(q(s))$. In the displayed equation: c, h in the first term of the first line should be $c(t)$ and $h(t)$, after the first equality, term in the integral should read $g_U(c(t), B_U(c(t), c'(t), c'(t)), h(t))$.

- p.140, the integrals should be $\int_{\mathbb{S}^1}$ instead of $\int_{\mathbb{S}^1}^1$

- p.188, 2nd line of (d): It should be $\alpha^{-1}(U)$ instead of $\alpha^{-1}(U \times U)$, last line of (g) after the first inclusion the w should be a capital W.

- p.189, end of second line of the proof of A.10 should read $-\lambda N \cap \lambda N \subseteq M$. Delete the sentence starting with "By Lemma A.2(c)..."

- p.189 Exercise A.1.1 is missing at the end of the first sentence "such that $0 \in B^{\circ}$".

- p.190 First displayed equation should read $0 < 3\delta = \cdots \leq 2\delta$, in the second and later it should be $U_{x_0+y_o}$ and the i and ε should have subscripts.

- p.192 A.16 Lemma: "If U is an *open* disc...," Insert "if $p_U(x) = t, p_U(y) = s$" after the "Therefore" in the proof.