Errata and complements for *Game-theoretic Foundations for Probability and Finance* (Wiley, 2019)

Glenn Shafer and Vladimir Vovk

October 6, 2024

1 Errata

- **Page 48, Exercise 2.8, the two displayed formulas in item 2:** replace $\mathbb{P}$ by $\overline{\mathbb{P}}$ in two places.
- **Page 218, the second line after Equation (10.19):** replace β^{II} by P^{II}.
- **Page 233, the second line:** "The other four" should be "The other three".
- **Page 246, the middle of the page:** in the definition of $\mathrm{VS}(p)$, replace "$p \geq 1/e$" by "$p \leq 1/e$".
- **Page 247, the last two lines:** replace Q by $\mathbb{P}$ and remove the definition of Q (having both q and Q uniform on $[0,1]$ is an overkill).
- **Page 325, the third line in the proof of Lemma 13.17:** remove 2^{-k} in the definition of X.
- **Page 351, the first line:** "equality" should be "second inequality".

2 Complements

- **Page 60, the first two lines of the statement of Corollary 3.8:** the statement will remain true (with the same proof) if we replace $a_1, b_1, \ldots, a_n, b_n$ by $b_1 - a_1, \ldots, b_n - a_n$. This will strengthen it.
- **Page 113, Axioms E1–E4:** We could have mentioned that, in the presence of Axioms E1 and E2, the conjunction of Axioms E3 and E4 is equivalent to

  Axiom E3.5. For each $f \in \overline{\mathbb{R}}^{\mathcal{Y}}$, $\overline{\mathbf{E}}(f) \leq \sup f$.

Axiom E3.5 is used widely in imprecise probabilities; see, e.g., [Troffaes and de Cooman, 2014, Theorems 4.1 and 4.2] and [Augustin et al., 2014, Section 2.2.1].

- **Page 182, Proof of Theorem 9.7:** We should have mentioned that we are partly following [Vovk and Shen, 2010, Section 7].

References

Thomas Augustin, Frank P. A. Coolen, Gert de Cooman, and Matthias C. M. Troffaes, editors. *Introduction to Imprecise Probabilities*. Wiley, Chichester, UK, 2014.

Matthias C. M. Troffaes and Gert de Cooman. *Lower Previsions*. Wiley, Chichester, UK, 2014.

Vladimir Vovk and Alexander Shen. Prequential randomness and probability. *Theoretical Computer Science*, 411:2632–2646, 2010. Special Issue devoted to the Nineteenth International Conference on Algorithmic Learning Theory.