Erratum

Self-organizing maps: ordering, convergence properties and energy functions

E. Erwin, K. Obermayer, K. Schulten

Beckman Institute and Department of Physics, University of Illinois at Urbana-Champaign, 405 North Mathews Avenue, Urbana, IL 61801, USA

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The article listed above contains a few mistakes and misprints, which we would like to correct here:

1) The definition of an ordered state in Equation (4) is incorrect. The definition should read

either $s > r \Rightarrow w_s > w_r, \forall r, s$,

or $s > r \Rightarrow w_s < w_r, \forall r, s$.

All references to an ordered state in the paper are intended to refer to this definition.

2) The sentence below Equation (5) should read

... $[1 - \epsilon h(r, s)]$ is positive, smaller than one, and decreases monotonously from one with decreasing $[w_s - v]$.

3) The wording of Definition 1 in Appendix A is ambiguous. The intended meaning is

case 1 (ascending):

$$\begin{cases} w_s < w_{s+1} < w_{s+2} < \dots < w_{s+k-1} \\ \text{and for each } j \notin \{s, s+1, \dots, s+k-1\} \\ \text{either } w_j < w_s \text{ or } w_j > w_{s+k-1}, \end{cases}$$

with similar text for case 2.

4) There was a typographical error in Lemma 2 of Appendix A. The line should read

$$\begin{aligned} i) & \quad |w_r - w_s| < |w_r - w_{s'}| \text{ if } H(|r - s|) > H(|r - s'|), \\ ii) & \quad |w_r - w_s| > |w_r - w_{s'}| \text{ if } H(|r - s|) < H(|r - s'|) \dots \end{aligned}$$

5) In the proof of Lemma 3 of Appendix A, the line

... choose v near w_{s+k-2} , until w_{s+k-1} is greater than w_{s+k-2} and closer to it than to any other weight w_j ...

should be replaced by

... choose v near $w_{s+k/2}$, until w_{s+k-1} becomes the nearest weight larger than w_{s+k-2} ...

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