don't know much 'bout neural networks? An interactive tutorial

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Abstract

I'm releasing an interactive tutorial suitable for either individual learning or in the context of a class wherein each student, or pair of students, has a computer. I used it for my third-year psychology university students. Before beginning the 100-minute class, most had little idea how connectionist networks could store memories or compute visually guided action.

Keywords

Cognitive Neuroscience (Subfield), Neuroscience, Psychology, Simbrain

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I'm releasing an interactive tutorial suitable for either individual learning or in the context of a class wherein each student, or pair of students, has a computer. I used it for my third-year psychology university students. Before beginning the 100-minute class, most had little idea how connectionist networks could store memories or compute visually guided action. By the end, they were happily rewiring their networks to encode new memories or accomplish new actions. It's all made possible by the free, beautiful, and easy-to-use Java-based neural network simulator SimBrain that I blogged earlier.

SimBrain comes with a large number of tutorials, but these are designed for an entire course on neural networks. I needed one that could fit a single 90-minute class, so I created my own, which are basically just modifications of the great content they already released. I've posted the network files to be used with SimBrain, plus the instructions, here. The instructions are broken up into several separate webpages. Each one ends with an exercise for the students to try. The subsequent webpage discusses the answer to the exercise a bit. During the actual class we teach, we prevent the students from proceeding immediately to the subsequent webpage by password-protecting the pages, and giving them the password after they've made an effort. I might be able to provide access to that version upon request. Let me know of any problems, and whether you find the tutorial useful.

UPDATE 2016: Disregard the above instructions, you can find information on the updated materials here: http://www.psych.usyd.edu.au/staff/alexh/teaching/

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