CNeuro2024

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Reading Material: *Lectures 1 & 2*

Reading material.
Lecture 1. **The cerebellum: a computational perspective.**

-Marr, D. (1969) A theory of cerebellar cortex. *J Physiol., 202*, 437-470
-Clopath, C., et al (2014). A cerebellar learning model of vestibulo-ocular reflex adaptation in wild-type and mutant mice. *Journal of Neuroscience*, *34*(21), 7203-7215.
-Litwin-Kumar, A., et al. "Optimal degrees of synaptic connectivity." *Neuron* 93.5 (2017): 1153-1164
-Lanore, F., et al. "Cerebellar granule cell axons support high-dimensional representations." *Nature neuroscience* 24.8 (2021): 1142-1150.
-Brunel, N, et al. "Optimal information storage and the distribution of synaptic weights: perceptron versus Purkinje cell." *Neuron* 43.5 (2004): 745-757.
-Barri, A., et al. "Synaptic basis of a sub-second representation of time in a neural circuit model." *Nature Communications* 13.1 (2022): 7902.

Lecture 2. **The credit assignment problem and the cerebellum.**
-Williams, R. J. (1992). Simple statistical gradient-following algorithms for connectionist reinforcement learning. *Machine learning*, *8*, 229-256.
-Fiete, I. R., Fee, M. S., & Seung, H. S. (2007). Model of birdsong learning based on gradient estimation by dynamic perturbation of neural conductances. *Journal of neurophysiology*, *98*(4), 2038-2057.
-Bouvier, G. et al. "Cerebellar learning using perturbations." *Elife* 7 (2018): e31599.
-Hiratani, N. et al. "On the stability and scalability of node perturbation learning." *Advances in Neural Information Processing Systems* 35 (2022): 31929-31941.
-Ohmae, S., & Medina, J. F. (2015). Climbing fibers encode a temporal-difference prediction error during cerebellar learning in mice. *Nature neuroscience*, *18*(12), 1798-1803