

## Videos

- 1. Supplementary Movie 1** The MRNN was trained using reaching data from 125 recording sessions up through the previous day. The video shows a continuous 90 seconds of monkey R using this decoder to perform the Radial 8 Task. He controls the white cursor and acquires the green target (which turns blue during the 500 ms target hold period). Dataset R.2014.04.03. This is a portion of the data used to generate the drop 0 electrodes condition of Fig. 3.
- 2. Supplementary Movie 2** During the experiment, the two decoders were evaluated in alternating blocks after the same 3 most important electrodes were dropped. Here we show a continuous 60 seconds of each decoder's closed-loop performance from consecutive blocks. The MRNN (right side) was trained using reaching data from 125 recording sessions up through the previous day, while the FIT Kalman filter (left side) was trained using reaching data from earlier that same day. Dataset monkey R.2014.04.03. This is a portion of the data used to generate the drop 3 electrodes condition of Fig. 3.