

Description of Additional Supplementary Files

Supplementary Movie 1. Video of four different objects (table, boat, plane, guitar) during self-classification. The process takes around three minutes in real-time, with all the cubes reaching the correct classification.

Supplementary Movie 2. Video shows robustness to different levels of faulty cell (ranging from 5% – 15%) for different objects.

Supplementary Movie 3. Video shows out-of-distribution generalization to shapes not seen during training, such as modified table, and scaled-down versions of a plane, a guitar, a round table.

Supplementary Movie 4. Video of the different hidden channels during self-classification of different shapes.

Supplementary Movie 5. Video of the manual construction of one of the cellular bricks.