

Figure 1: A double opponent cell selective to horizontally oriented borders with red above and green below; only responsive to that particular stimulus. In Figure (b), the neuron is presented with its ideal stimulus: its  $R_{\text{on}}$  and  $G_{\text{on}}$  receptive fields are fully activated while its  $R_{\text{off}}$  and  $G_{\text{off}}$  receptive fields are completely unactivated. Figure (e) presents the neuron with the exact opposite stimulus, neither its  $R_{\text{on}}$  nor  $G_{\text{on}}$  receptive fields are activate at all, and both its  $R_{\text{off}}$  and  $G_{\text{off}}$  receptive fields are fully activated, ensuring no response possible from the cell. While its  $R_{\text{on}}$  receptive field might be strongly stimulated in (a) and (f), it's  $R_{\text{off}}$  receptive field cancels it out. Similarly, in (c) and (d) its  $G_{\text{on}}$  receptive field is stimulated but cancelled out by activity in its  $G_{\text{off}}$  receptive field.

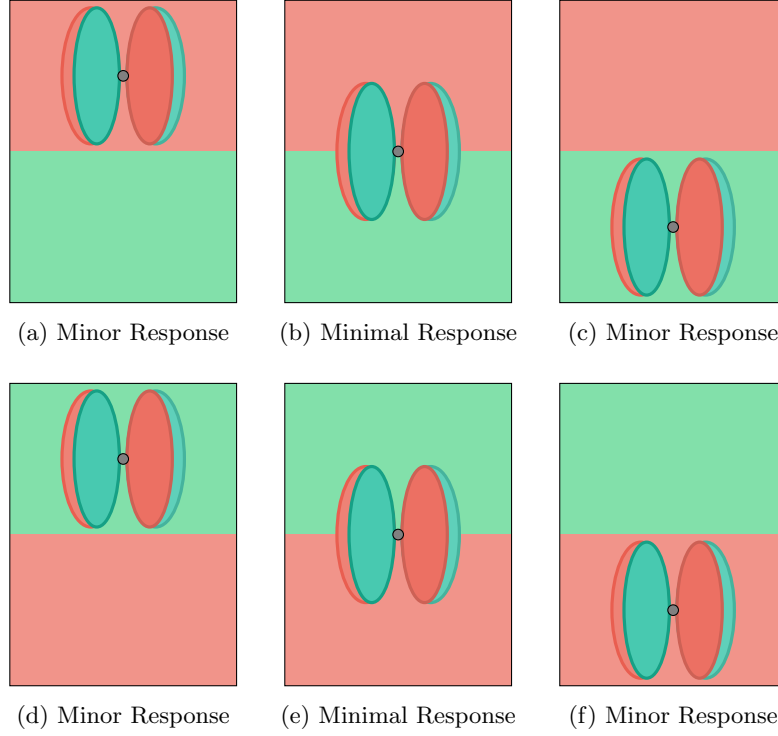


Figure 2: A double opponent cell selective to vertically oriented borders with red to the right and green on the left; completely unresponsive to a horizontal border. While its  $R_{\text{on}}$  receptive field might be strongly stimulated in (a) and (f), its  $R_{\text{off}}$  receptive field cancels it out. Similarly, in (c) and (d) its  $G_{\text{on}}$  receptive field is stimulated but cancelled out by activity in its  $G_{\text{off}}$  receptive field. In (b) and (e) both of its  $R_{\text{on}}$  and  $G_{\text{on}}$  receptive fields are moderately activated, but again, cancelled out by activation in its  $R_{\text{off}}$  and  $G_{\text{off}}$  receptive fields, respectively.