PadhAI: MP Neuron & Perceptron

One Fourth Labs

Geometric Basics

1. Chapter on geometry basics, a brush-up.
2. $x_2 = mx_1 + c$
3. In 2D: General form $ax_1 + bx_2 + c = 0$
   a. Consider a = 2, b = 1, c = -2
   b. The intercepts are 1 and 2
   c. Consider the point (1,2), plugging it into the equation gives us the value 2
   d. If $ax_1 + bx_2 + c > 0$ then it is above the line
   e. If $ax_1 + bx_2 + c < 0$ then it is below the line
   f. If $ax_1 + bx_2 + c = 0$ then it is on the line
4. In 3D: General form $ax_1 + bx_2 + cx_3 + d = 0$
   a. If $ax_1 + bx_2 + cx_3 + d > 0$ then it is above the line
   b. If $ax_1 + bx_2 + cx_3 + d < 0$ then it is below the line
   c. If $ax_1 + bx_2 + cx_3 + d = 0$ then it is on the line