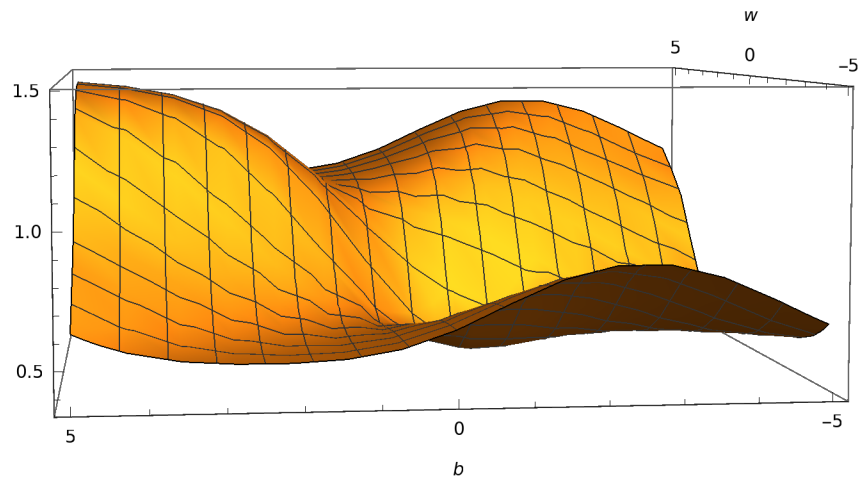
```
In[•]:= x := {-1, 0, 1, 2}

In[•]:= T := {0, 1, 0, 0}

In[•]:= f[t_] = 1 / (1 + Exp[-t])

Out[•]= 1 / (1 + ℯ^-t)

In[•]:= Error[w_, b_] := (1 / 2) * Sum[(T[[μ]] - f[w * x[[μ]] + b])^2, {μ, 1, M}]

In[•]:= M := 4

In[•]:= Plot3D[Error[w, b], {w, -5, 5}, {b, -5, 5}, AxesLabel → Automatic]
```

Out[•]=




```
In[•]:= w0 = 0.3626027

Out[•]= 0.362603

In[•]:= b0 = 0.25141536

Out[•]= 0.251415
```

In[•]:=
```
Show[
 Graphics3D[{Red, Arrowheads[Large], Arrow[{{w0, b0, Error[w0, b0]},
     {w0 - D[Error[w, b], w] /. {w → w0, b → b0},
      b0 - D[Error[w, b], b] /. {w → w0, b → b0}, Error[w0 - D[Error[w, b], w] /.
        {w → w0, b → b0}, b0 - D[Error[w, b], b] /. {w → w0, b → b0}]}]}], Axes → True],
 Plot3D[Error[w, b], {w, -5, 5}, {b, -5, 5}, AxesLabel → Automatic],
 BoxRatios → {1, 1, 1/3}]
```

Out[•]=