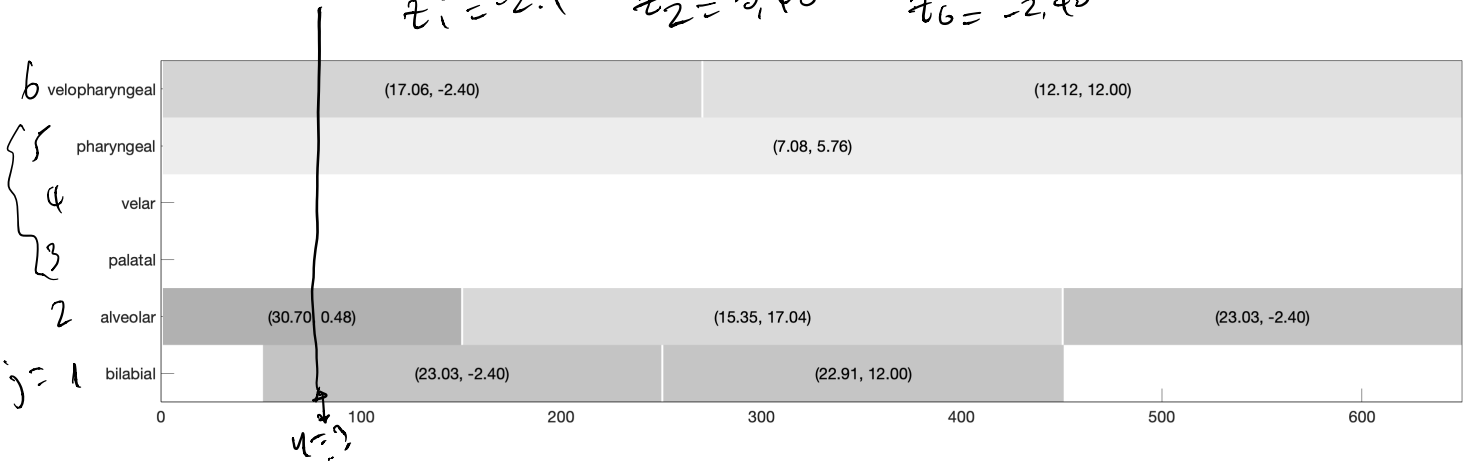
$w_1 = 23.03$ $w_2 = 30,70$ $w_b = 12.06$

$z_1 = -2.4$ $z_2 = 0,46$ $z_6 = -2,40$



Input: $\mathbf{w}[n], \mathbf{w}[n-1], \mathbf{w}[n-2]$ (from data); initial estimates $\hat{\boldsymbol{\omega}}_o = (\omega_1, ..., \omega_6)$; $\hat{\mathbf{z}}_o = (z_1, ..., z_6)$; threshold θ; learning rate γ

Find cluster with center $\mathbf{w_c}$ is closest to $\mathbf{w}[n-1]$;

Retrieve $\mathbf{z_c}$, F and J's for that cluster ;

while $E > \theta$ **do**

  $\hat{\mathbf{w}}[n] = f(\mathbf{w}[n-1], \mathbf{w}[n-2], \hat{\boldsymbol{\omega}}_o, \hat{\mathbf{z}}_o)$;

  $E(\hat{\boldsymbol{\omega}}_o, \hat{\mathbf{z}}_o) = \|\hat{\mathbf{w}}[n] - \mathbf{w}[n]\|_2$;

  for *i=1...6* **do**

    Compute $\partial E/\partial \omega_i, \partial E/\partial z_i$

    Update $\omega_i \leftarrow \omega_i - \gamma \partial E/\partial \omega_i$, $z_i \leftarrow z_i - \gamma \partial E/\partial z_i$

  end

end

$E(w_1, x_1, w[n], w[n-1], w[n-2])$

$w_2 \dots w_6 = \dots$

$\rightsquigarrow E(w_1)$

$E(w_i + \Delta w_i) = E(w_1 + 0.01 w_1)$

$E(w_1 - \Delta w_1) = E(w_1 - 0,01 w_1)$

$$\frac{\partial f}{\partial x} = \frac{f(x_2) - f(x_1)}{x_2 - x_1}$$

for i in range (6):

$E(w_i + 0,01 w_i)$

$E(w_i - 0,01 w_i)$

$$\frac{E(w_i + 0,01 w_i) - E(w_i - 0,01 w_i)}{0,02 w_i}$$

→ def $E(\vec{w}, \vec{x}, w[n], w[n-1], w[n-2])$

def $\frac{\partial E}{\partial w_i}(\dots)$

def $\frac{\partial E}{\partial x_i}(\dots)$