

Given $(x_0, y_0) \dots (x_n, y_n)$
and $x^* \notin \{x_0, \dots, x_n\}$

Want to evaluate $P(x)$

Sum = 0

do $k = 0, \dots, n$

prod = 1

do $i = 0, \dots, n$

if $(i \neq k)$

prod = prod $\cdot \frac{x^* - x(i)}{x(k) - x(i)}$

endif

end i

Sum = Sum + $y(k) \cdot \text{prod}$

end k

In matlab

$(x_i, y_i)_{i=0}^n \rightarrow (x(1:n+1), y(1:n+1))$

Sum = 0

do $k = 1, \dots, \underline{n+1}$

prod = 1

do $i = 1, \dots, n+1$

if $(i \neq k)$

prod = prod $\cdot \frac{x^* - x(i)}{x(k) - x(i)}$

endif

end i

Sum = Sum + $y(k) \cdot \text{prod}$

end k