

# Using Normalised Radial Based Functions (NRBF's) to Product Energy Consumption in the National Grid

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## I. INTRODUCTION

## II. NETWORK

### A. NRBF

Node Activation Equation

$$y = \exp\left(-\frac{1}{2\sigma^2} \sum_{k=1}^K (x_k - w_{jk})^2\right)$$

Root Mean Squar Equation

$$RMS = \sqrt{\frac{1}{M} \sum_{i=1}^M (y_i^p - y_{id}^p)^2}$$

Weight Update Equation

$$W \leftarrow W + \alpha * (target - Networkoutput) * \phi$$

1) Task 1:

$$\left\| \begin{array}{ccc} \text{Sigma Value} & \text{Train Error} & \text{Test Error} \end{array} \right\|$$

2) Task 2:

$$\left\| \begin{array}{ccc} \text{Number of Nodes} & \text{Train Error} & \text{Test Error} \end{array} \right\|$$

$$\left\| \begin{array}{ccc} \text{Sigma Value} & \text{Train Error} & \text{Test Error} \end{array} \right\|$$

### B. MLP

1) Task 2:

## III. DATA

A. Data processing methods

B. Problems with the data

## IV. RESULTS

## V. CONCLUSION