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| **Computational Intelligence Course**  **Scientific Computing Department**  **Faculty of Computer and Information Sciences**  **Ain Shams University, Egypt** |
| **A Report of Final Project – (RBFN)**  **By** |
| **Team no.: [8]**  **[Alaa Mohamed] - [1]**  **[Aliaa Salah] - [2]**  **[Raghda Ahmed] - [2]**  **[Manar Ahmed] - [4]**  **[Manar AbdAlslam] - [4]** | |
| **Project Title** |
| **"*Epilepsy Diagnosis Using EEG Signals*"** |

**1st Semester 2017\2018**

* **RBFN Models (Results)**

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| **# Epochs** | **Input layer** | | **Hidden layer** | | **Output layer** | |
| 500 | # Neurons | 20 | # Hidden neurons | 3 | # Neurons | 1 |
|  |  | | Bias=1 |  | **Accuracy** | 86.6% |

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| **# Epochs** | **Input layer** | | **Hidden layer** | | **Output layer** | |
| 100 | # Neurons | 20 | # Hidden neurons | 12 | # Neurons | 1 |
|  |  | | Bias=1 |  | **Accuracy** | 69.2% |

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| **# Epochs** | **Input layer** | | **Hidden layer** | | **Output layer** | |
| 300 | # Neurons | 20 | # Hidden neurons | 8 | # Neurons | 1 |
|  |  | | Bias=0 |  | **Accuracy** | 84.2% |

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| **# Epochs** | **Input layer** | | **Hidden layer** | | **Output layer** | |
| 300 | # Neurons | 20 | # Hidden neurons | 3 | # Neurons | 1 |
|  |  | | Bias=0 |  | **Accuracy** | 91% |

* **The Best RBFN Model**

In this section, mention the best model (that has the greatest accuracy) of your previous tried models.

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| **# Epochs** | **Input layer** | | **Hidden layer** | | **Output layer** | |
| 300 | # Neurons | 20 | # Hidden neurons | 3 | # Neurons | 1 |
|  |  | | Bias=0 |  | **Accuracy** | 91% |

* **Conclusion**

We used z score normalization on data

Learning rate =0.001

MSE =0.001

Stopping condition LMSE and no of epochs

on each test case. In the hidden layer, the less number of neurons we use, the more accuracy we get. As shown in the best model we used only 3 neurons while in other models we used up to 12 neurons and it affects the accuracy badly.