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| logo.jpg  **Artificial Neural Networks Course**  **Computer Science Department**  **Faculty of Computer and Information Sciences**  **Ain Shams University, Egypt** |
| **A Report of Final Project – (RBFN)**  **By** |

|  |  |
| --- | --- |
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| **Project Title** | |
| **"*Object Detection and Recognition*"** | |

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**2nd Semester 2017\2018**

# **RBFN Models (Results)**

**Model 1**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **# Epochs** | **Input layer** | | **Hidden layer** | | **Output layer** | |
| 50 | # Neurons | 20 | # Hidden neurons | 15 | # Neurons | 5 |
| **Learning** **rate** | .01 | | **MSE threshold** | .01 | **Accuracy** | 34.6% |

**Model 2**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **# Epochs** | **Input layer** | | **Hidden layer** | | **Output layer** | |
| 300 | # Neurons | 20 | # Hidden neurons | 18 | # Neurons | 5 |
| **Learning** **rate** | .1 | | **MSE threshold** | .01 | **Accuracy** | 46% |

**Model 3**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **# Epochs** | **Input layer** | | **Hidden layer** | | **Output layer** | |
| 50 | # Neurons | 20 | # Hidden neurons | 11 | # Neurons | 5 |
| **Learning** **rate** | .03 | | **MSE threshold** | .01 | **Accuracy** | 50% |

**Model 5**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **# Epochs** | **Input layer** | | **Hidden layer** | | **Output layer** | |
| 50 | # Neurons | 20 | # Hidden neurons | 11 | # Neurons | 5 |
| **Learning** **rate** | .8 | | **MSE threshold** | .03 | **Accuracy** | 61.5% |

**Model 6**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **# Epochs** | **Input layer** | | **Hidden layer** | | **Output layer** | |
| 300 | # Neurons | 20 | # Hidden neurons | 13 | # Neurons | 5 |
| **Learning** **rate** | .5 | | **MSE threshold** | .001 | **Accuracy** | 65.3% |

# **The Best RBFN Model**

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **# Epochs** | **Input layer** | | **Hidden layer** | | **Output layer** | |
| 300 | # Neurons | 20 | # Hidden neurons | 13 | # Neurons | 5 |
| **Learning** **rate** | .5 | | **MSE threshold** | .001 | **Accuracy** | 65.3% |