|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **CHAPTER NO.** | **TITLE** | | | | **PAGE NO.** | | |
|  | **ABSTRACT** | | | | **v** | | |
|  | **LIST OF TABLE** | | | | **viii** | | |
|  | **LIST OF FIGURES** | | | | **ix** | | |
|  | **LIST OF ABBREVIATION** | | | | **x** | | |
| 1 | **INTRODUCTION** | | | | 01 | | |
| 1.2 Review of Literature Survey | | | |  | | |
| 2 | **EXISTING** **SYSTEM** | | | | 05 | | |
|  | 2.1 | Limitations of Existing system | | | 06 | | |
| 3 | **PROPOSED** **SYSTEM** | | | | 12 | | |
|  | 3.1 | ALEXNET | | | 13 | | |
|  |  | 3.1.1 | | **Architecture of AlexNet** | 13 | |
|  | 3.2 | LENET | |  |  | |
|  |  | 3.2.1 | | **Architecture of LeNet-5** |  | |
| 4 | **CONVULUTIONAL** **NEURAL** **NETWORK** | | | | 15 | | |
|  | 4.1 | | Experiment and Results | | 16 | | |
|  | 4.2 | | ARCHITECTURE OF CNN | | 18 | | |
|  | 4.3 | | PREPARING THE DATASET | | 22 | | |
|  | 4.4 | | Implementation of PSO-PI | | 23 | | |
| 5 | **SOFTWARE IMPLEMENTATION** | | | | 25 | | |
|  |  | | | |  | | |
| **CHAPTER NO.** | **TITLE** | | | | **PAGE NO.** |
|  | 5.1 | | MATLAB Coding | | 25 |
|  | 5.2 | | Output of the Existing System | | 27 |
|  | 5.3 | | Output of the Proposed System | | 27 |
| 6 | **SIMULATION RESULTS** | | | | 28 |
|  | 6.1 | Simulink Block Diagram Without Disturbance | | | 28 |
|  |  | 6.1.1 | | Performance Criteria of the System with Ziegler-Nichols Controller | 29 |
|  |  | 6.1.2 | | Performance Criteria of the System With PSO-PI Controller | 30 |
|  | 6.2 | Simulink Block Diagram With Disturbance | | | 31 |
|  |  | 6.2.1 | | Performance Criteria of the System with Ziegler-Nichols Controller | 32 |
|  |  | 6.2.2 | | Performance Criteria of the System with PSO-PI Controller | 33 |
|  | 6.3 | Advantages | | | 34 |
|  | 6.4 | Applications | | | 34 |
|  | 6.5 | Future Scope | | | 34 |
| 7 | **CONCLUSION & FUTURE SCOPE** | | | | 35 |
|  | **APPENDICES** | | | |  |
|  | **REFERENCES** | | | |  |