**TABLE OF CONTENT**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **ABSTRACT** | | | | | | | | | | | | | **I** | |
|  |  | **LIST OF FIGURES** | | | | | | | | | | | | | **II** | |
|  |  | **LIST OF ABBRIVATIONS** | | | | | | | | | | | | | **III** | |
|  |  |  | | | | | | | | | | | | |  | |
| **1** |  | **INTRODUCTION** | | | | | | | | | | | | |  | |
|  | | | 1.1 | | | INTRODUCTION | | | | | | | | 2 | |
|  | | | | | | | | 1.1.1 | | | MACHINE LEARNING | | | 2 | |
|  | | | | | | | | 1.1.2 | | | PANDAS | | | 4 | |
|  | | | | | | | | 1.1.3 | | | MATPLOTLIB | | | 4 | |
|  | | | | | | | | 1.1.4 | | | SCIKIT-LEARN | | | 5 | |
|  | | | | | | | | 1.1.5 | | | PICKLE | | | 6 | |
|  | | | | | | | | 1.1.6 | | | FLASK | | | 7 | |
|  | | | | | | | | 1.1.7 | | | DIMENSIONALITY REDUCTION | | | 8 | |
|  | | | 1.2 | | | SCOPE OF THE PROJECT | | | | | | | | 9 | |
| **2** |  | **LITERATURE SURVEY** | | | | | | | | | | | | |  | |
|  | | | 2.1 | | | AN ACTUAL SURVEY ON DIMENSIONALITY REDUCTION | | | | | | | | 11 | |
|  | | | 2.2 | | | | PRINCIPAL COMPONENT ANALYSIS[PCA] | | | | | | | 13 | |
| **3** |  | **SYSTEM ANALYSIS** | | | | | | | | | | | | |  | |
|  | | | 3.1 | | | | EXISTING SYSTEM | | | | | | | 18 | |
|  | | | 3.2 | | | | DISADVANTAGES | | | | | | | 18 | |
|  | | | 3.3 | | | | PROPOSED SYSTEM | | | | | | | 18 | |
|  | | | 3.4 | | | | ADVANTAGES | | | | | | | 19 | |
| **4** |  | **SYSTEM REQUIREMENTS** | | | | | | | | | | | | |  | |
|  | | | 4.1 | | | | SOFTWARE REQUIREMENTS | | | | | | | 21 | |
|  | | | 4.2 | | | | HARDWARE REQUIREMENTS | | | | | | | 21 | |
|  | | | 4.3 | | | | SOFTWARE DESCRIPTION | | | | | | | 21 | |
|  | | | | | | | | 4.3.1 | | | | | PYTHON3 | 21 | |
| **5** |  | **SYSTEM DESIGN** | | | | | | | | | | | | |  | |
|  | | | 5.1 | | | | GENERAL | | | | | | | 24 | |
|  | | | 5.2 | | | | STRUCTURE OF DESIGN DOCUMENT | | | | | | | 24 | |
|  | | | | | | | 5.2.1 | | | | | | SYSTEM ARCHITECTURE | 24 | |
|  | | | | | | | 5.2.2 | | | | | | USECASE DIAGRAM | 25 | |
|  | | | | | | | 5.2.3 | | | | | | SEQUENCE DIAGRAM | 26 | |
|  | | | | | | | 5.2.4 | | | | | | DATA FLOW DIAGRAM | 27 | |
| **6** |  | **SYSTEM IMPLEMENTATION** | | | | | | | | | | | | |  | |
|  | | | 6.1 | | | | MODULES | | | | | | | 29 | |
|  | | | | | | | | | 6.1.1 | | | | NUMPY | 29 | |
|  | | | | | | | | | 6.1.2 | | | | PANDAS | 30 | |
|  | | | | | | | | | 6.1.3 | | | | MATPLOTLIB | 31 | |
|  | | | | | | | | | 6.1.4 | | | | SCIKIT-LEARN | 31 | |
|  | | | | | | | | | 6.1.5 | | | | SEABORN | 32 | |
|  | | | | | | | | | 6.1.6 | | | PICKLE | | 33 | |
|  | | | | | 6.2 | | | | DATA SET MODULE | | | | | 34 | |
|  | | | | | 6.3 | | | | TRAINING MODULE | | | | | 34 | |
|  | | | | | 6.4 | | | | DIMENSIONALITY REDUCTION MODULE | | | | | 34 | |
|  | | | | | 6.5 | | | | TESTING MODULE | | | | | 34 | |
| **7** |  | **SYSTEM TESTING** | | | | | | | | | | | | |  | |
|  | | | | | 7.1 | | | | UNIT TESTING | | | | | 36 | |
|  | | | | | 7.2 | | | | INTEGRATION TESTING | | | | | 37 | |
|  | | | | | 7.3 | | | | ACCEPTANCE TESTING | | | | | 38 | |
|  | | | | | 7.4 | | | | BLACK BOX TESTING | | | | | 38 | |
|  | | | | | 7.5 | | | | WHITE B0X TESTING | | | | | 38 | |
| **8** |  | **CONCLUSION & FUTURE ENHANCEMENT** | | | | | | | | | | | | |  | |
|  | | | | | 8.1 | | | | CONCLUSION | | | | | 40 | |
|  | | | | | 8.2 | | | | FUTURE ENHANCEMENT | | | | | 41 | |
| **9** |  | **SYSTEM USECASE** | | | | | | | | | | | | |  | |
|  | | | | | 9.1 | | | | SYSTEM USECASE | | | | | 42 | |
|  | | | | | 9.2 | | | | METROPOLITAN AREA | | | | | 42 | |
|  | | | | | 9.3 | | | | MIGRATION PEOPLE | | | | | 42 | |
|  | | | | | 9.4 | | | | BUSINESS | | | | | 42 | |
| **10** |  | **APPENDICES** | | | | | | | | | | | | |  | |
|  | | | | 10.1 | | | | | | SOURCE CODE | | | | 44 | |
|  | | | | 10.2 | | | | | | SCREEN SHOTS | | | | 55 | |
|  |  |  | | | | | | | | | | | | |  | |
|  |  | **REFERENCE** | | | | | | | | | | | | | **IV** | |