

DAFTAR ISI

| | |
|--|------|
| HALAMAN SAMPUL | i |
| HALAMAN JUDUL..... | ii |
| HALAMAN PENGESAHAN..... | iii |
| PERNYATAAN BEBAS PLAGIASI | iv |
| HALAMAN MOTTO DAN PERSEMBAHAN..... | v |
| PRAKATA..... | vi |
| DAFTAR ISI..... | viii |
| DAFTAR GAMBAR | xi |
| DAFTAR TABEL..... | xii |
| INTISARI..... | xiii |
| ABSTRACT | xiv |
| BAB I..... | 1 |
| PENDAHULUAN | 1 |
| 1.1 Latar Belakang | 1 |
| 1.2 Rumusan Masalah | 3 |
| 1.3 Batasan Masalah..... | 3 |
| 1.4 Tujuan Penelitian..... | 3 |
| 1.5 Manfaat Penelitian..... | 4 |
| 1.6 Keaslian Penelitian | 4 |
| BAB II..... | 5 |
| TINJAUAN PUSTAKA | 5 |
| 2.1 Perbandingan pustaka atau penelitian yang bersesuaian..... | 7 |
| BAB III | 9 |
| LANDASAN TEORI..... | 9 |
| 3.1 Metode <i>Naïve Bayes</i> | 9 |
| 3.1.1 <i>Naïve Bayes</i> untuk klasifikasi | 10 |
| 3.1.2 <i>Laplace Correction</i> | 12 |
| 3.1.3 Karakteristik <i>Naïve Bayes</i> | 12 |
| 3.2 <i>Support Vector Machine (SVM)</i> | 13 |

| | | |
|--------------------------|--|----|
| 3.2.1 | SVM pada <i>Linearly Separable Data</i> | 13 |
| 3.2.2 | SVM pada <i>Nonlinearly Separable Data</i> | 16 |
| 3.3 | <i>Artificial Neural Network</i> | 17 |
| 3.3.1 | Arsitektur ANN | 18 |
| 3.3.2 | <i>Single-Layer Feedforward Network (SLFN)</i> | 19 |
| 3.3.3 | <i>Multi-Layer Feedforward Network (MLFN)</i> | 19 |
| 3.3.4 | Algoritma <i>Backpropagation</i> | 20 |
| 3.4 | <i>K-Fold Cross Validation</i> | 23 |
| 3.5 | <i>Confusion Matrix</i> | 24 |
| 3.6 | Visualisasi Data | 25 |
| 3.7 | Ujian Nasional | 26 |
| 3.7.1 | Tujuan Ujian Nasional | 28 |
| BAB IV | | 29 |
| ANALISIS DAN PERANCANGAN | | 29 |
| 4.1 | Gambaran Umum | 29 |
| 4.2 | Studi Literatur..... | 29 |
| 4.3 | Data Penelitian | 30 |
| 4.3.1 | Karakteristik Data | 31 |
| 4.3.2 | Pembagian Data | 32 |
| 4.4 | <i>Preprocessing</i> | 33 |
| 4.4.1 | Konversi Data..... | 33 |
| 4.4.2 | Seleksi Ciri | 34 |
| 4.5 | Rancangan Proses Klasifikasi Model | 35 |
| 4.5.1 | Proses Klasifikasi | 35 |
| 4.5.2 | Perhitungan Manual pada Algoritma | 40 |
| 4.6 | Rancangan Percobaan..... | 48 |
| 4.6.1 | Pencarian Parameter Terbaik | 49 |
| 4.7 | Rancangan Pengujian | 50 |
| BAB V | | 51 |
| IMPLEMENTASI | | 51 |
| 5.1 | Implementasi Tahap Awal..... | 51 |
| 5.2 | Implementasi Algoritma <i>Naïve Bayes</i> | 52 |

| | | |
|-------------------------------------|---|----|
| 5.3 | Implementasi Algoritma <i>Support Vector Machine</i> | 54 |
| 5.4 | Implementasi Algoritma <i>Backpropagation</i> | 55 |
| 5.5 | Implementasi Pelatihan Model | 57 |
| 5.6 | Implementasi Pengujian | 58 |
| BAB VI | | 59 |
| ANALISIS HASIL DAN PEMBAHASAN | | 59 |
| 6.1 | Hasil percobaan algoritma <i>Naïve Bayes</i> | 59 |
| 6.2 | Hasil Percobaan Algoritma <i>Support Vector Machine</i> | 60 |
| 6.2.1 | Kernel <i>Linear</i> | 60 |
| 6.2.2 | Kernel <i>RBF</i> | 62 |
| 6.2.3 | Kernel <i>Polynomial</i> | 63 |
| 6.2.4 | Kernel <i>Sigmoid</i> | 64 |
| 6.3 | Hasil Percobaan Algoritma <i>Backpropagation</i> | 66 |
| 6.4 | Model yang dihasilkan | 71 |
| 6.4.1 | Model <i>Naïve Bayes</i> | 72 |
| 6.4.2 | Model <i>Support Vector Machines</i> | 73 |
| 6.4.3 | Model <i>Backpropagation</i> | 74 |
| 6.5 | Analisis dan Pembahasan Hasil Percobaan | 76 |
| 6.5.1 | Analisis Model IPA | 76 |
| 6.5.2 | Analisis Model IPS | 78 |
| BAB VII | | 81 |
| KESIMPULAN DAN SARAN | | 81 |
| 7.1 | Kesimpulan | 81 |
| 7.2 | Saran | 81 |
| DAFTAR PUSTAKA | | 82 |
| LAMPIRAN | | 85 |
| 1. | Sebaran data dengan menggunakan nilai komponen utama | 85 |
| 2. | Sebaran jumlah data antar atribut | 88 |