

## Daftar Isi

|                                                    |      |
|----------------------------------------------------|------|
| LEMBAR PENGESAHAN .....                            | i    |
| LEMBAR ORISINALITAS .....                          | ii   |
| ABSTRAK .....                                      | iii  |
| ABSTRACT .....                                     | iv   |
| KATA PENGANTAR .....                               | v    |
| UCAPAN TERIMA KASIH .....                          | vii  |
| Daftar Isi .....                                   | viii |
| Daftar Gambar .....                                | xi   |
| Daftar Tabel .....                                 | xii  |
| BAB I .....                                        | 1    |
| PENDAHULUAN .....                                  | 1    |
| 1.1 Latar Belakang Masalah .....                   | 1    |
| 1.2 Rumusan Masalah .....                          | 8    |
| 1.3 Tujuan Dan Manfaat .....                       | 8    |
| 1.4 Batasan Masalah .....                          | 8    |
| 1.5 Metode Penelitian .....                        | 9    |
| BAB II .....                                       | 11   |
| KAJIAN PUSTAKA .....                               | 11   |
| 2.1 Tinjauan Pustaka .....                         | 11   |
| 2.2 Dasar Teori .....                              | 20   |
| 2.2.1 Sentimen Analisis .....                      | 20   |
| 2.2.2 Vtuber (Virtual Youtuber) .....              | 20   |
| 2.2.3 Data Mining .....                            | 20   |
| 2.2.4 Algoritma Support Vektor Machine (SVM) ..... | 22   |
| 2.2.5 Algoritma Naïve Bayes .....                  | 24   |
| 2.2.6 Crawling .....                               | 25   |
| 2.2.7 Confusion Matrix .....                       | 25   |
| BAB III .....                                      | 27   |
| ALUR MODEL .....                                   | 27   |
| 3.1 Alur Model .....                               | 27   |
| 3.1.1 Pengumpulan Data .....                       | 27   |

|                                    |                                        |    |
|------------------------------------|----------------------------------------|----|
| 3.1.2                              | Pre-Processing Data .....              | 28 |
| 3.1.3                              | Labeling Data .....                    | 29 |
| 3.1.4                              | Perancangan Model .....                | 30 |
| 3.1.5                              | Evaluasi .....                         | 30 |
| BAB IV .....                       |                                        | 32 |
| HASIL PERCOBAAN DAN ANALISIS ..... |                                        | 32 |
| 4.1                                | Skenario Percobaan .....               | 32 |
| 4.2                                | Pengumpulan Data .....                 | 33 |
| 4.3                                | Tahapan Preprocessing .....            | 34 |
| 4.3.1                              | Case Folding .....                     | 34 |
| 4.3.2                              | Data Cleaning .....                    | 35 |
| 4.3.3                              | Data Translate .....                   | 35 |
| 4.3.4                              | Tokenizing .....                       | 36 |
| 4.3.5                              | Stopword Removal .....                 | 36 |
| 4.3.6                              | Stemming .....                         | 37 |
| 4.3.7                              | Labeling dan Vektorisasi .....         | 38 |
| 4.4                                | Distribusi Sentimen .....              | 39 |
| 4.5                                | Pembagian Dataset dan Validasi .....   | 40 |
| 4.6                                | Evaluasi Model Tanpa SMOTE .....       | 40 |
| 4.6.1                              | Naïve Bayes .....                      | 40 |
| 4.6.2                              | SVM .....                              | 41 |
| 4.7                                | Evaluasi Model dengan SMOTE .....      | 42 |
| 4.7.1                              | Naïve Bayes (dengan SMOTE) .....       | 42 |
| 4.7.2                              | SVM (dengan SMOTE) .....               | 43 |
| 4.8                                | Evaluasi K-Fold Cross Validation ..... | 44 |
| 4.9                                | Pembahasan Umum .....                  | 45 |
| BAB V .....                        |                                        | 46 |
| KESIMPULAN DAN SARAN .....         |                                        | 46 |
| 5.1                                | Kesimpulan .....                       | 46 |
| 5.2                                | Saran .....                            | 46 |
| Daftar Pustaka .....               |                                        | 49 |
| Lampiran .....                     |                                        | 52 |