

DAFTAR ISI

HALAMAN PENGESAHAN PEMBIMBING	ii
HALAMAN PENGESAHAN PENGUJI.....	iii
SURAT PERNYATAAN KARYA ASLI TUGAS AKHIR.....	iv
PERNYATAAN BEBAS PLAGIASI	v
ABSTRAK	vi
<i>ABSTRACT</i>	vii
KATA PENGANTAR	viii
DAFTAR ISI.....	ix
DAFTAR TABEL	xii
DAFTAR GAMBAR.....	xiii
DAFTAR PERSAMAAN.....	xv
BAB 1 PENDAHULUAN.....	1
1.1 Latar Belakang.....	1
1.2 Rumusan Masalah	2
1.3 Batasan Masalah.....	2
1.4 Tujuan Penelitian.....	2
1.5 Manfaat Penelitian.....	2
1.6 Tahapan Penelitian.....	2
1.7 Sistematika Penulisan.....	3
BAB 2 TINJAUAN LITERATUR	4
2.1 Studi Pustaka	4
2.2 <i>Twitter</i>	8
2.3 <i>Web Scraping</i>	9
2.4 Klasifikasi Teks	9
2.5 Analisis Sentimen.....	10
2.5.1 Level Dokumen	11
2.5.2 Level Kalimat	11
2.5.3 Berbasis Aspek	11
2.6 <i>Text Preprocessing</i>	11
2.6.1 <i>Casefolding</i>	12
2.6.2 <i>Stopwords removal</i>	12
2.6.3 <i>Tokenizing</i>	12
2.7 <i>Word Embedding</i>	12

2.7.1	<i>Word2vec</i>	12
2.8	<i>Deep Learning</i>	13
2.9	<i>Convolutional Neural Network</i>	13
2.9.1	Representasi Kalimat	14
2.9.2	<i>Convolutional Layer</i>	14
2.9.3	<i>Max-Pooling</i>	14
2.9.4	<i>Fully Connected Layer</i>	15
2.9.5	<i>Dropout</i>	15
2.9.6	<i>Optimization</i>	15
2.9.7	<i>Sigmoid</i>	15
2.9.8	<i>Softmax</i>	15
2.10	<i>Confusion Matrix</i>	15
2.10.1	Akurasi	16
2.10.2	Presisi	16
2.10.3	<i>Recall</i>	16
2.10.4	<i>F-Measure</i>	16
BAB 3 METODOLOGI PENELITIAN		17
3.1	Metodologi Penelitian	17
3.2	Perancangan Model	17
3.3	<i>Scrapping Data</i>	17
3.4	<i>Labeling Data</i>	18
3.5	<i>Preprocessing Data</i>	19
3.5.1	<i>Casefolding</i>	20
3.5.2	Hapus Angka	21
3.5.3	Hapus Tanda Baca	22
3.5.4	Hapus Karakter Selain Angka & Huruf	23
3.5.5	Hapus Karakter Satu Huruf	24
3.5.6	Hapus Spasi Ganda	25
3.5.7	Tokenisasi	26
3.5.8	Hapus <i>Stopword</i>	26
3.6	<i>Embedding</i>	28
3.7	<i>Convolutional Neural Network</i>	29
3.7.1	<i>Input Layer</i>	30
3.7.2	<i>Convolutional Layer</i>	30

3.7.3	<i>Activation Layer</i>	32
3.7.4	<i>Pooling Layer</i>	32
3.7.5	<i>Fully Connected Layer</i>	33
3.7.6	<i>Output Layer</i>	34
3.8	Perancangan <i>Interface</i>	35
3.8.1	Halaman <i>Dataset</i>	35
3.8.2	Halaman <i>Preprocess Dataset</i>	35
3.8.3	Halaman Pengujian	36
3.8.4	Halaman Uji Coba	36
3.9	Perancangan Pengujian	37
3.9.1	Rancangan Pengujian Model	37
3.9.2	Rancangan Pengujian <i>Interface</i>	38
BAB 4 HASIL DAN PEMBAHASAN		39
4.1	Hasil	39
4.2	Pengumpulan Data	39
4.2.1	<i>Scrapping Data</i>	39
4.2.1	Pelabelan Data	40
4.2.2	Kamus <i>Stopword</i>	40
4.3	Implementasi Model	40
4.3.1	<i>Text Preprocessing</i>	40
4.3.2	<i>Embedding</i>	42
4.3.3	Model CNN	43
4.3.4	Pengujian	44
4.4	Implementasi <i>Interface</i>	51
4.4.1	Pengujian	52
4.5	Pembahasan	53
BAB 5 KESIMPULAN DAN SARAN		54
5.1	Kesimpulan	54
5.2	Saran	54
DAFTAR PUSTAKA		55
LAMPIRAN		58