

DAFTAR ISI

LEMBAR PERSETUJUAN	ii
LEMBAR PENGESAHAN	ii
LEMBAR PERNYATAAN KARYA SENDIRI.....	iv
ABSTRAK.....	v
<i>ABSTRACT.....</i>	<i>vi</i>
KATA PENGANTAR	vii
DAFTAR ISI.....	ix
DAFTAR TABEL.....	xiii
DAFTAR GAMBAR	xiv
BAB I PENDAHULUAN.....	1
1.1 Latar Belakang	1
1.2 Perumusan Masalah.....	3
1.3 Tujuan Penelitian.....	4
1.4 Manfaat Penelitian.....	4
1.5 Batasan Masalah.....	4
1.6 Kerangka Pemikiran	5
1.7 Sistematika Penulisan.....	6
BAB II LANDASAN KEPUSTAKAAN	8
2.1 Tinjauan Pustaka	8
2.2 <i>The State of The Art</i>	10
2.3 Implementasi Teknologi pada Pendidikan	12
2.4 Bahasa Arab	13
2.5 <i>Data mining</i>	14
2.6 CRISP-DM	14
2.6.1. <i>Business Understanding</i>	15
2.6.2. <i>Data Understanding</i>	16
2.6.3. <i>Data Preparation</i>	17

2.6.4.	<i>Modeling</i>	18
2.6.5.	<i>Evaluation</i>	19
2.6.6.	<i>Deploy</i>	19
2.7	<i>Image Processing</i> dan <i>Image Recognition</i>	20
2.7.1.	<i>Image Processing</i>	20
2.7.2.	<i>Image Recognition</i>	21
2.8	<i>Convolutional Neural Network</i>	21
2.8.1.	Lapisan Konvolusional	23
2.8.2.	<i>Pooling Layers</i>	24
2.8.3.	Lapisan yang Terhubung Sepenuhnya(<i>Fully Connected Layer</i>).....	25
2.8.4.	Fungsi Aktifitasi ReLu (<i>Rectified Liner Unit</i>).....	26
2.8.5.	<i>Learning Rate</i>	27
2.8.6.	<i>Categorycal Cross-Entropy Loss</i>	27
2.8.7.	<i>Softmax Classifier</i>	28
2.8.8.	<i>Optimizer</i>	29
2.8.9.	<i>Confusion matrix</i>	30
2.8.10.	Akurasi.....	32
2.9	<i>Transfer learning</i>	32
2.10	<i>Visual Geomerty Group-16</i>	33
BAB III METODOLOGI PENELITIAN	35
3.1	<i>Business Understanding</i>	36
3.1.1.	<i>Determine Business Objective</i>	36
3.1.2.	<i>Asses Situation</i>	36
3.1.3.	<i>Determine Data mining Goals</i>	37
3.1.4.	<i>Plan Activities</i>	37
3.2	<i>Data Understanding</i>	37
3.2.1.	<i>Collect Initial Data</i>	38
3.2.2.	<i>Describe Data</i>	38
3.2.3.	<i>Explore Data</i>	38
3.3	<i>Data Preparation</i>	39
3.3.1.	<i>Data Selection</i>	39
3.3.2.	<i>Data preprocessing</i>	39
3.3.3.	<i>Transformation</i>	40

3.4	<i>Modeling</i>	42
3.4.1.	<i>Select Modeling Technique</i>	42
3.4.2.	<i>Build Model</i>	42
3.4.3.	<i>Generate Test Design</i>	43
3.5	<i>Evaluation</i>	44
3.6	<i>Deploy</i>	45
3.6.1.	<i>Deployment Plan</i>	45
3.6.2.	<i>Produce Final Report</i>	45
	BAB IV PEMBAHASAN.....	46
4.1	<i>Hasil Bussines Understanding</i>	46
4.1.1.	<i>Determine Business Objectives</i>	46
4.1.2.	<i>Asses Situation</i>	46
4.1.3.	<i>Determine Data mining Goals</i>	47
4.1.4.	<i>Plan Activities</i>	47
4.2	<i>Hasil Data Understanding</i>	47
4.2.1.	<i>Collect Initial</i>	47
4.2.2.	<i>Explore Data</i>	48
4.3	<i>Hasil Data Preparation</i>	48
4.3.1	<i>Data Selection</i>	48
4.3.1	<i>Data preprocessing</i>	49
4.3.2	<i>Transformation</i>	51
4.4	<i>Hasil Modeling</i>	57
4.4.1.	<i>Select Modeling Technique</i>	57
4.4.2.	<i>Build Model</i>	57
4.5	<i>Hasil Evaluation</i>	70
4.5.1.	<i>Determine Next Step</i>	71
4.6	<i>Hasil Deployment</i>	71
4.6.1.	<i>Deployment Plan</i>	71
4.6.2.	<i>Produce Final Report</i>	75
	BAB V KESIMPULAN DAN SARAN.....	79
5.1	Kesimpulan.....	79
5.2	Saran.....	80

DAFTAR PUSTAKA	81
LAMPIRAN.....	85
DAFTAR RIWAYAT HIDUP.....	97

