PROPOSAL

METODE TRANSFER LEARNING UNTUK KLASIFIKASI CITRA HURUF TULIS TANGAN AKSARA JAWA

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OUTLINE.

01. **PENDAHULUAN**
latar belakang, rumusan, batasan, tujuan, dan manfaat

02. **METODOLOGI PENELITIAN**
data dan alur

03. **TABEL SKENARIO PENGUJIAN**
visualisasi opsi penelitian

04. **JADWAL**
timeline pelaksanaan skripsi

pendahuluan.

LATAR BELAKANG.

Aksara Jawa, Machine Learning, Deep Learning, Transfer Learning.

RUMUSAN MASALAH

- Bagaimana cara melakukan implementasi transfer learning pada kasus citra huruf tulis tangan aksara jawa?
- Berapa akurasi yang diperoleh dari metode transfer learning?
- Dari ketiga pre-trained model yang peneliti ambil, manakah yang terbaik?

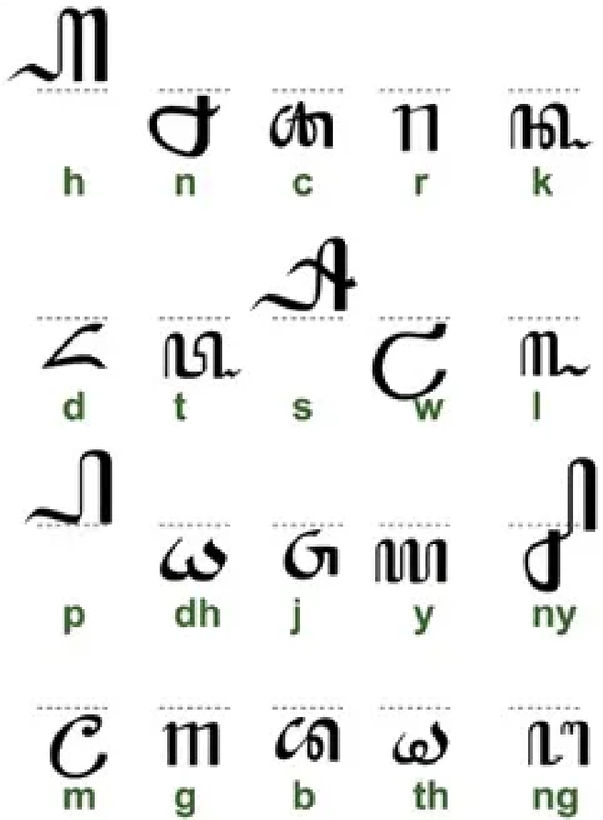
BATASAN MASALAH

1. Fokus terhadap citra huruf tulis tangan aksara Jawa
2. *Transfer learning* dengan VGG, Inception, Xception
3. Data penelitian adalah aksara Jawa tanpa pasangan (carakan)
4. Mencari *pre-trained* model terbaik yang diajukan

AKSARA JAWA

AKSARA CARAKAN (nglegena)

AKSARA PASANGAN (mati)



TUJUAN

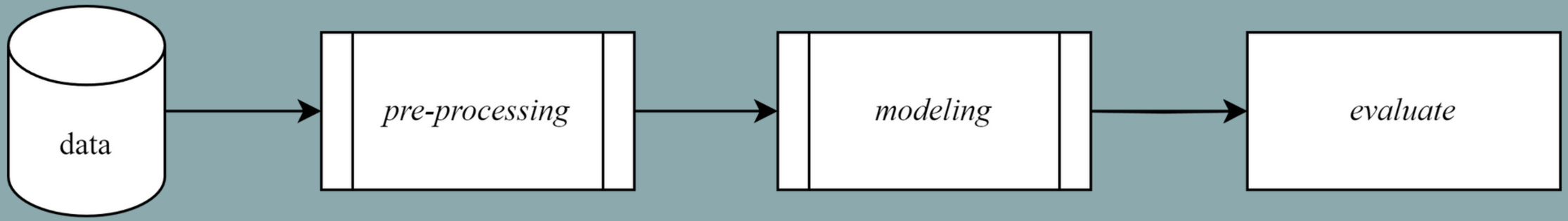
.klasifikasi citra aksara Jawa
.evaluasi kinerja model

MANFAAT

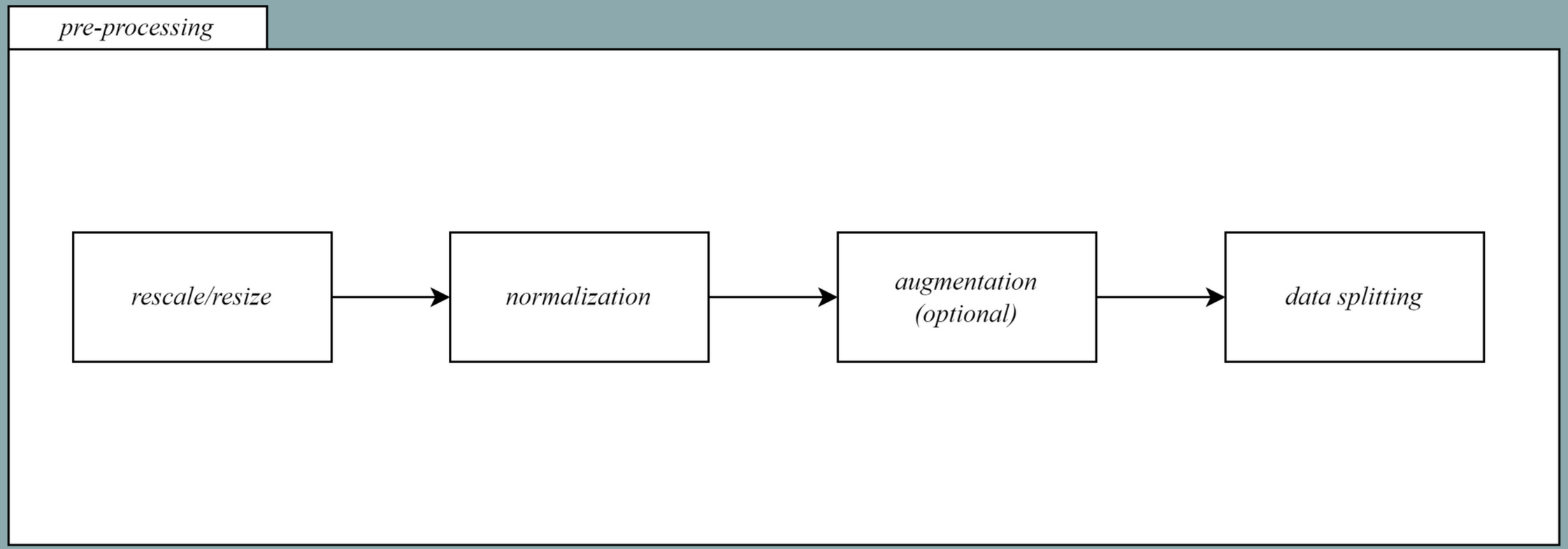
mengetahui performa dalam kasus ini.
membantu orang awam memahami aksara Jawa.
referensi penelitian lebih lanjut.

metodologi penelitian.

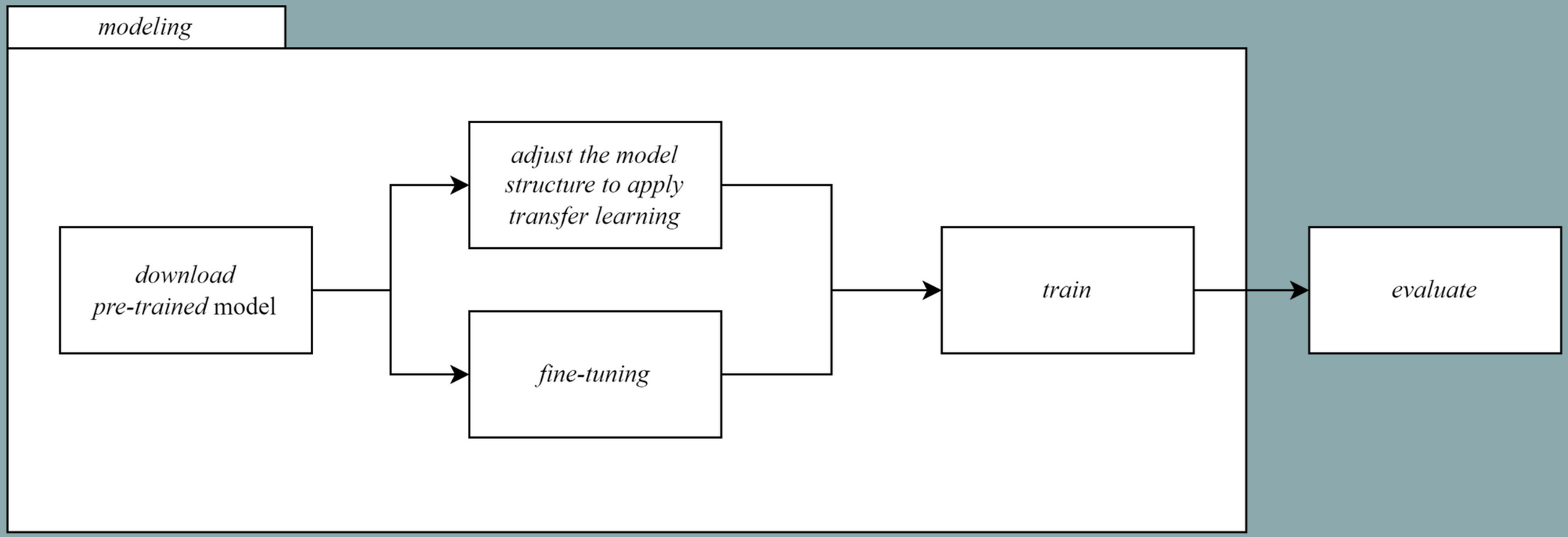
ALUR PENELITIAN



PRE-PROCESSING



MODELING


modeling
download pre-trained model
adjust the model structure to apply transfer learning
fine-tuning
train
evaluate

PREVIEW

DATA 1

https://www.kaggle.com/datasets/phiard/aksara-jawa

DATA 2

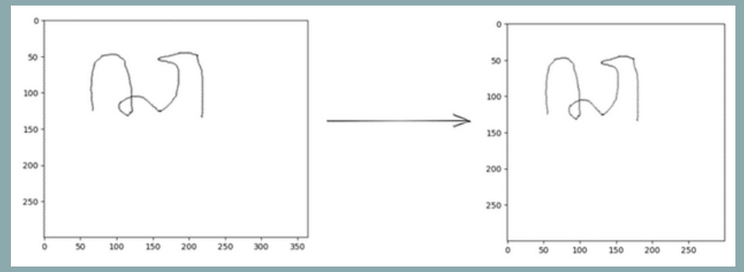
https://www.kaggle.com/datasets/vzrenggamani/hanacaraka

MERGE

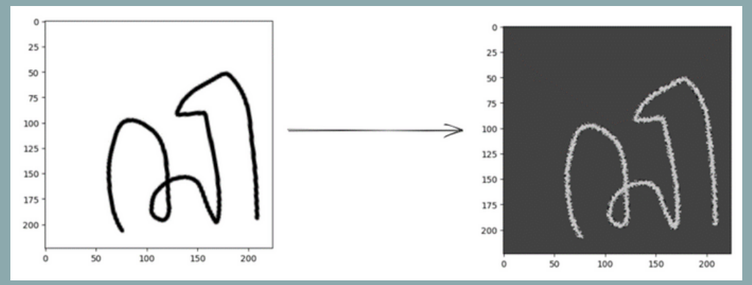
PREPROCESSING

rescale

364 x 300 --> 300 x 300

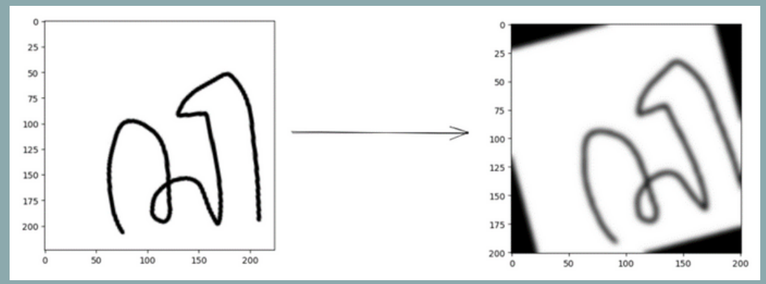


standardization



augmentation

-Rotation: 15°
-Image Scale: 0.9
-Blur Effect



data splitting

0.9 : 0.5 : 0.5

train : validation : test

3791 : 211 : 211

TRANSFER LEARNING

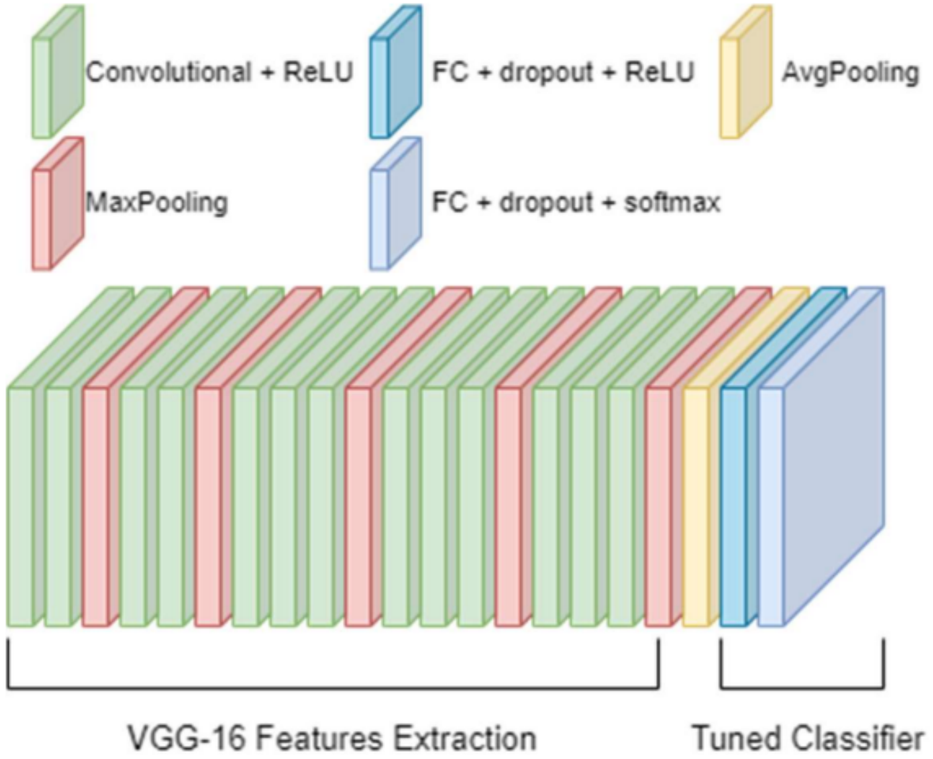


ILLUSTRATION OF VGG16 MODEL ARCHITECTURE USED

(Rizky, et al., 2023)

TRANSFER LEARNING

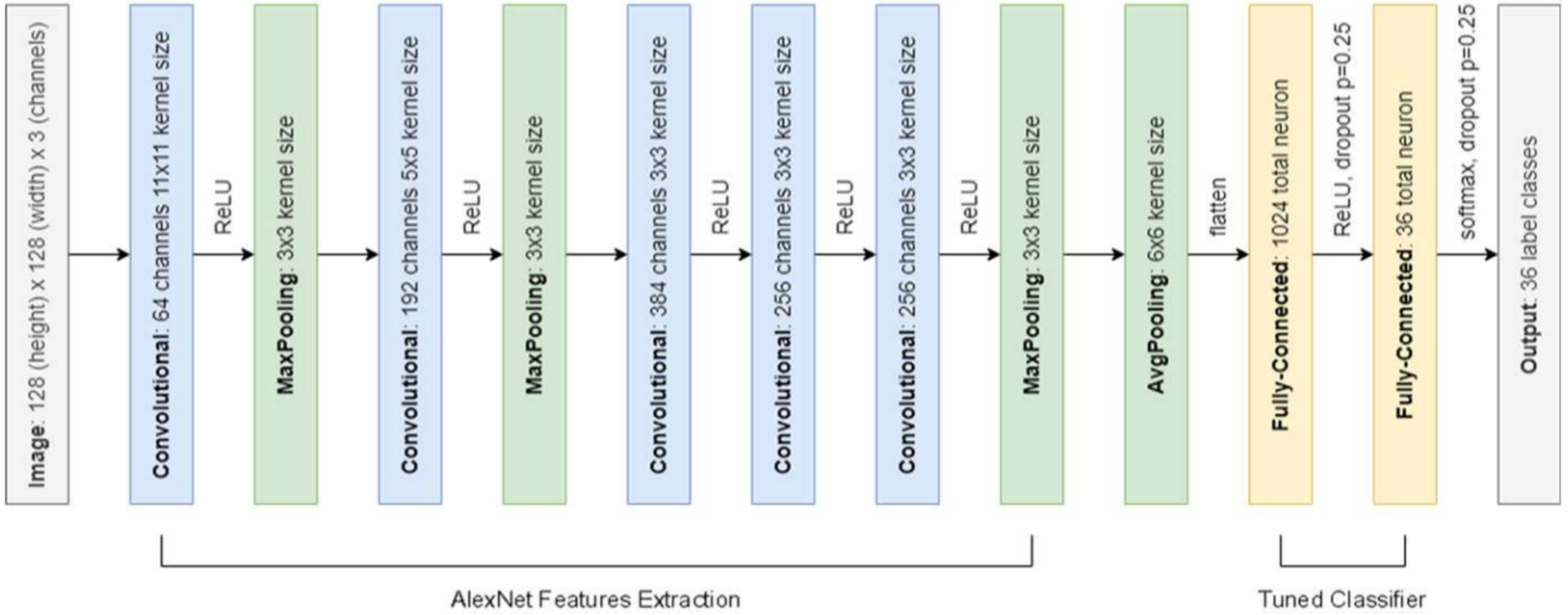


ILLUSTRATION OF ALEXNET MODEL ARCHITECTURE USED

(Rizky, et al., 2023)

FINE TUNING

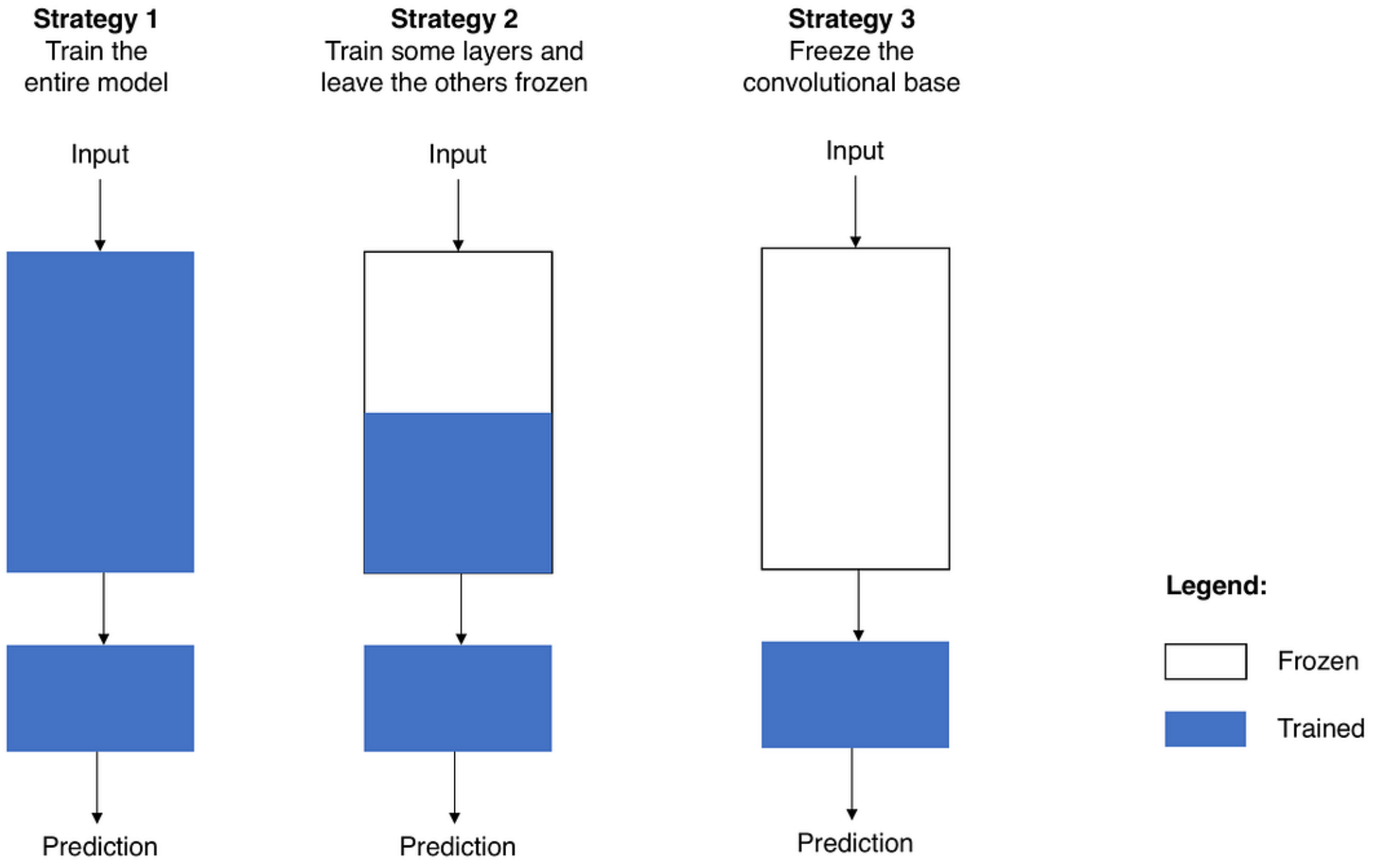
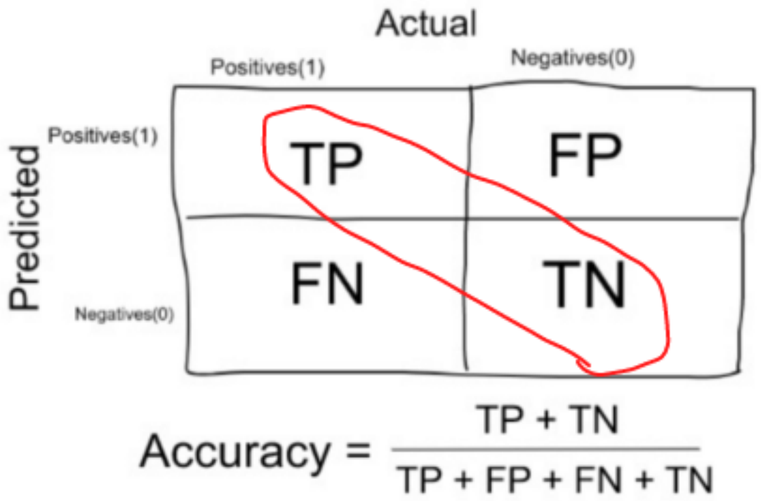


ILLUSTRATION OF FREEZING LAYER TO DO FINE TUNING

sumber: https://yeseullee0311.medium.com/pytorch-transfer-learning-alexnet-how-to-freeze-some-layers-26850fc4ac7e

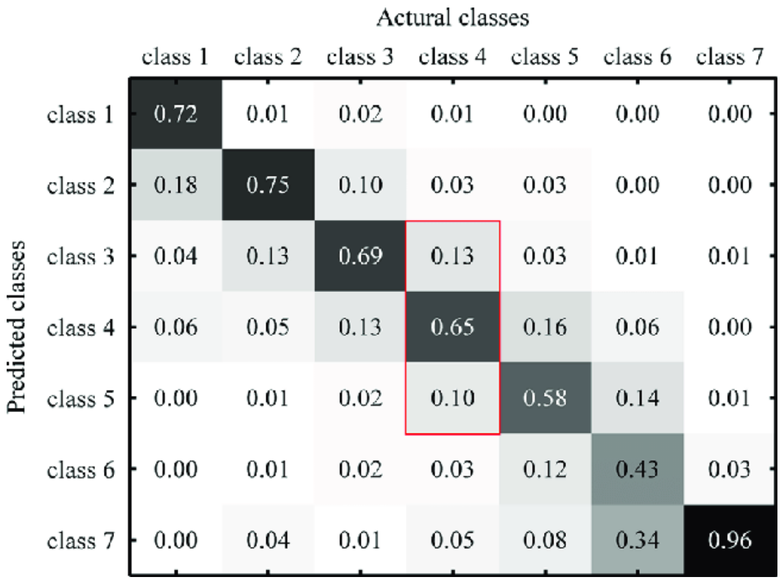
EVALUASI

akurasi.



sumber: https://ai.stackexchange.com/

confusion matrix.



sumber: https://www.researchgate.net

skenario pengujian.

MODEL	AUGMENTASI	FREEZE
VGG	Yes No	Full ½ None
Inception	Yes No	Full ½ None
Xception	Yes No	Full ½ None

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PEGUJIAN

jadwal.

NO.	KEGIATAN PENELITIAN	JADWAL/BULAN																																	
		APRIL				MAY				JUNE				JULY				AUGUST				SEPTEMBER				OCTOBER				NOVEMBER				DECEMBER			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	Pengumpulan Data																																				
2	Penyusunan Proposal																																				
3	Seminar Proposal																																				
4	*Preprocessing* Data																																				
5	Uji Coba tanpa Augmentasi																																				
6	Augmentasi Data																																				
7	Uji Coba dengan Augmentasi																																				
8	Analisa dan Hasil																																				
9	Evaluasi dan *Debugging*																																				
10	Penyusunan bab 4 dan 5																																				

terima kasih.