

IMAGE SEARCH ENGINE

FITUR BARU FASHION CAMPUS



URBAN - X TEAM



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Dimas Satrio Anggoro



ANGGOTA
Dandi Septiandi



ANGGOTA
Fanny Audri

AI

BE



KETUA TIM
Aulia Cisatra



ANGGOTA
Andra Setiyo Wicaksono

MENTOR AND FACIL

AI



MENTOR ALEXA
Yudi Pratama



FASILITATOR ALEXA
Ni Luh Nitya Laksmi

BE



MENTOR PERSEUS
William Onnyxforus Purnomo



FASILITATOR PERSEUS
Salmaa Ramadhan

PERSIAPAN DATA PEMODELAN



ZALANDORESEARCH/FASHION-MNIST

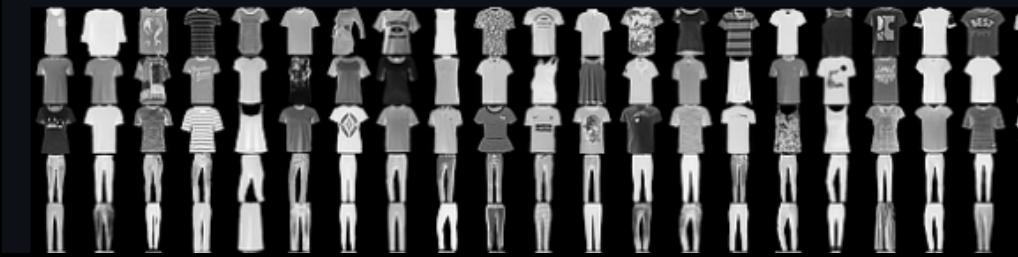
Fashion-MNIST

Star 10k chat on gitter README 中文 README 日本語 License MIT Year in Review

► Table of Contents

Fashion-MNIST is a dataset of Zalando's article images—consisting of a training set of 10,000 examples. Each example is a 28x28 grayscale image, associated with a label. Fashion-MNIST to serve as a direct drop-in replacement for the original MNIST dataset for learning algorithms. It shares the same image size and structure of training and testing sets.

Here's an example of how the data looks (each class takes three rows):



Label	Description
0	T-shirt/top
1	Trouser
2	Pullover
3	Dress
4	Coat
5	Sandal
6	Shirt
7	Sneaker
8	Bag
9	Ankle boot

DALL-E



GOOGLE IMAGES



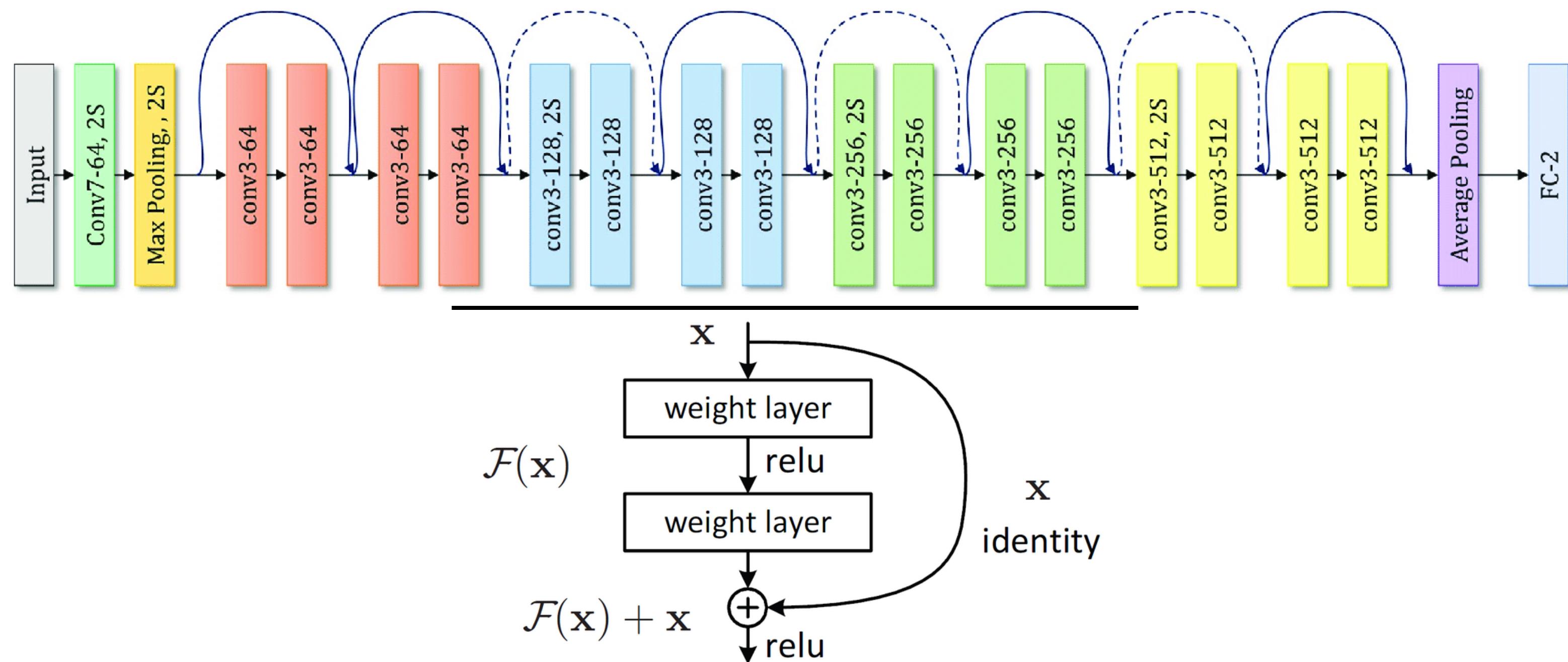


ALGORITMA MODEL

RESNET18

ALGORITMA

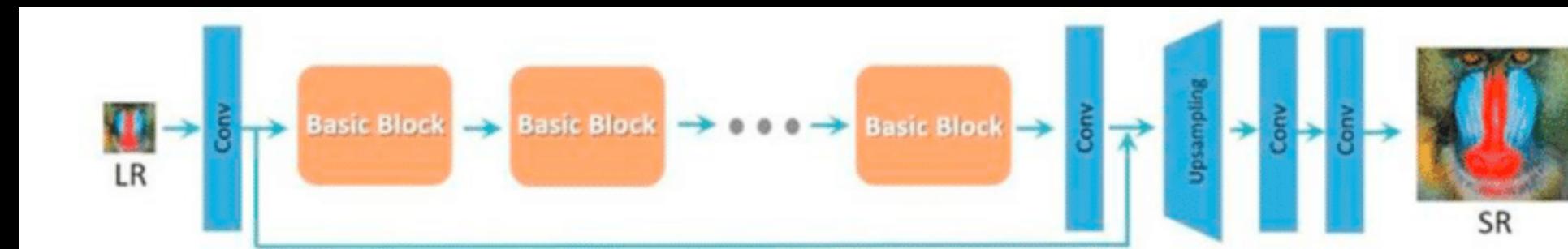
RESNET18



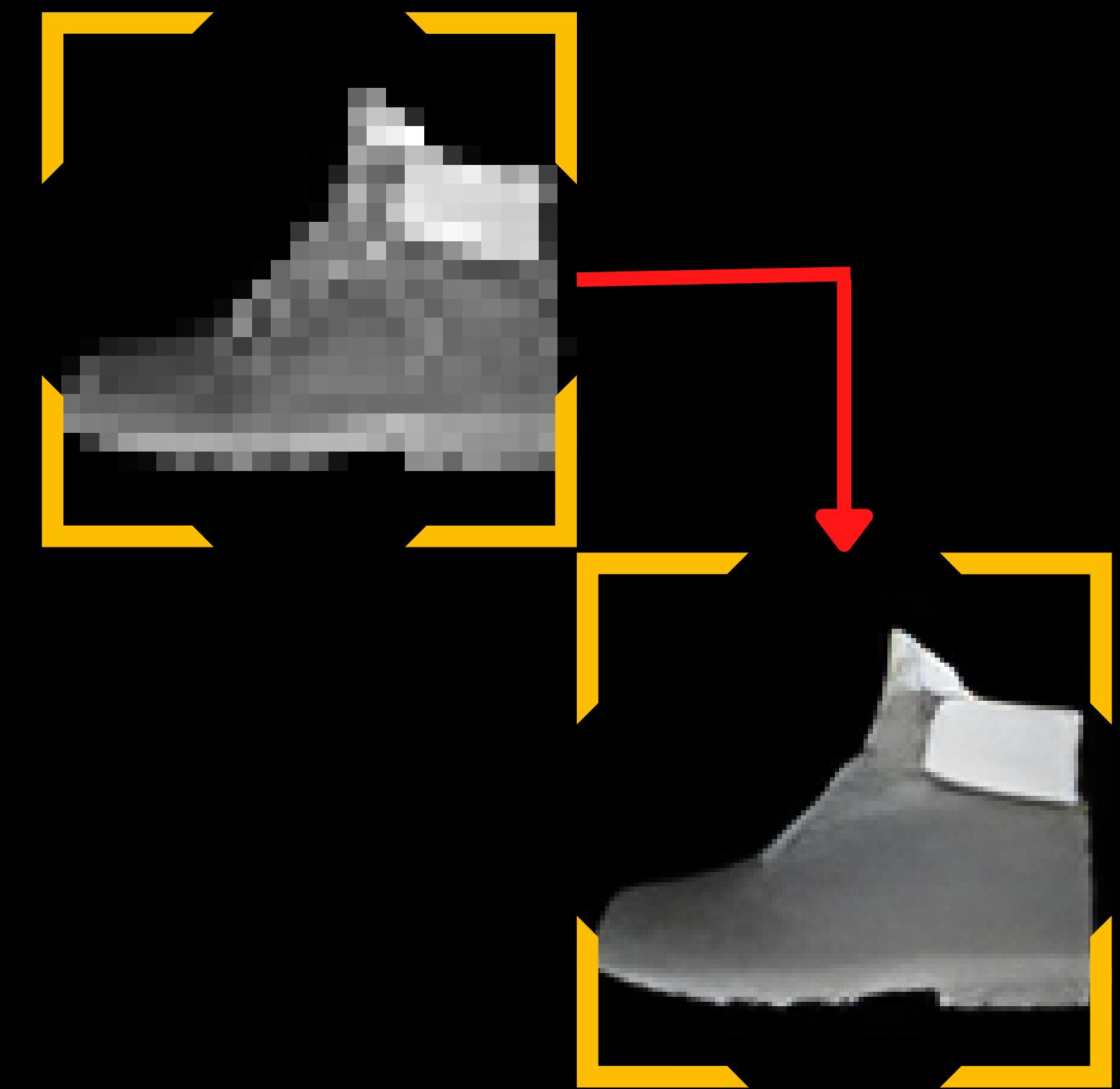
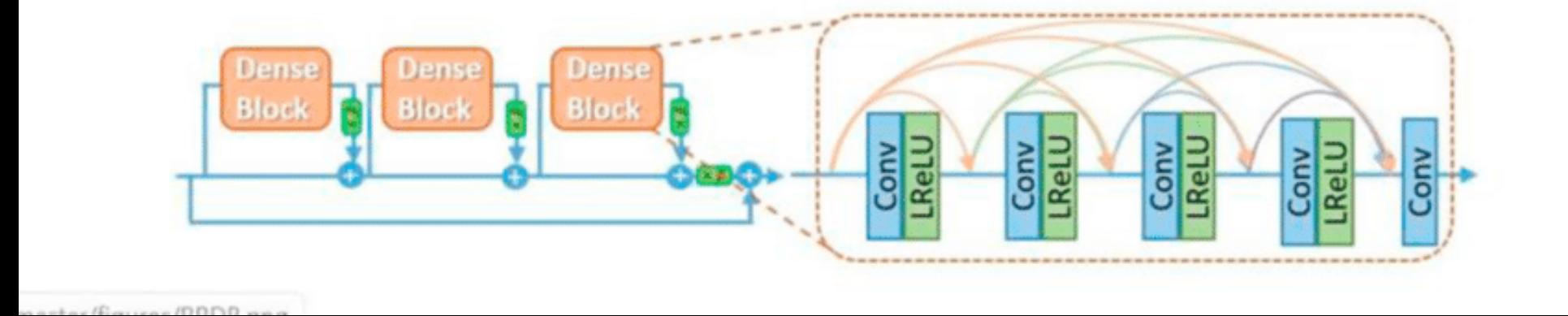
Sumber: https://www.researchgate.net/figure/Architecture-of-the-ResNet-18-model-used-in-this-study_fig3_354432343

METODE PENGEMBANGAN FITUR

REAL- ENHANCED SUPER-RESOLUTION GENERATIVE ADVESARIAL NETWORK



Residual in Residual Dense Block (RRDB)



Sumber: <https://github.com/xinntao/Real-ESRGAN>

METODE PENGEMBANGAN FITUR



AUGMENTASI DATA

**AUGMENTATION FLIP VERTICAL,
HORIZONTAL DAN ROTATE**

AUGMENTATION BLUR

AUGMENTATION INVERT COLOR

AUGMENTATION GRayscale

A person is working at a laptop, with their hands visible on the keyboard. The background is blurred, showing several colorful pieces of paper or documents scattered across a surface.

Kenapa harus ResNet18?

PERBANDINGAN RESNET18 DAN VGG16

Optimizer SGD, Loss Function Crossentropy, LR = 0.01, Momentum = 0.9

LR scheduler = Lr Step(Step size = 7, Gamma = 0.1)

	<i>Train Acc.</i>	<i>Val Acc.</i>	<i>Train Loss</i>	<i>Val Loss</i>	<i>Freeze Layer</i>	<i>Time</i>
ResNet18	0.9515	0.9197	0.1355	0.2408	Not Freeze	4270s
	0.8013	0.7711	0.5637	0.6368	Freeze all layer	1902s
VGG16	0.8527	0.8508	1.6091	1.6108	not Freeze	12544s
	0.8493	0.8492	1.6125	1.6128	Freeze all layer	8187s

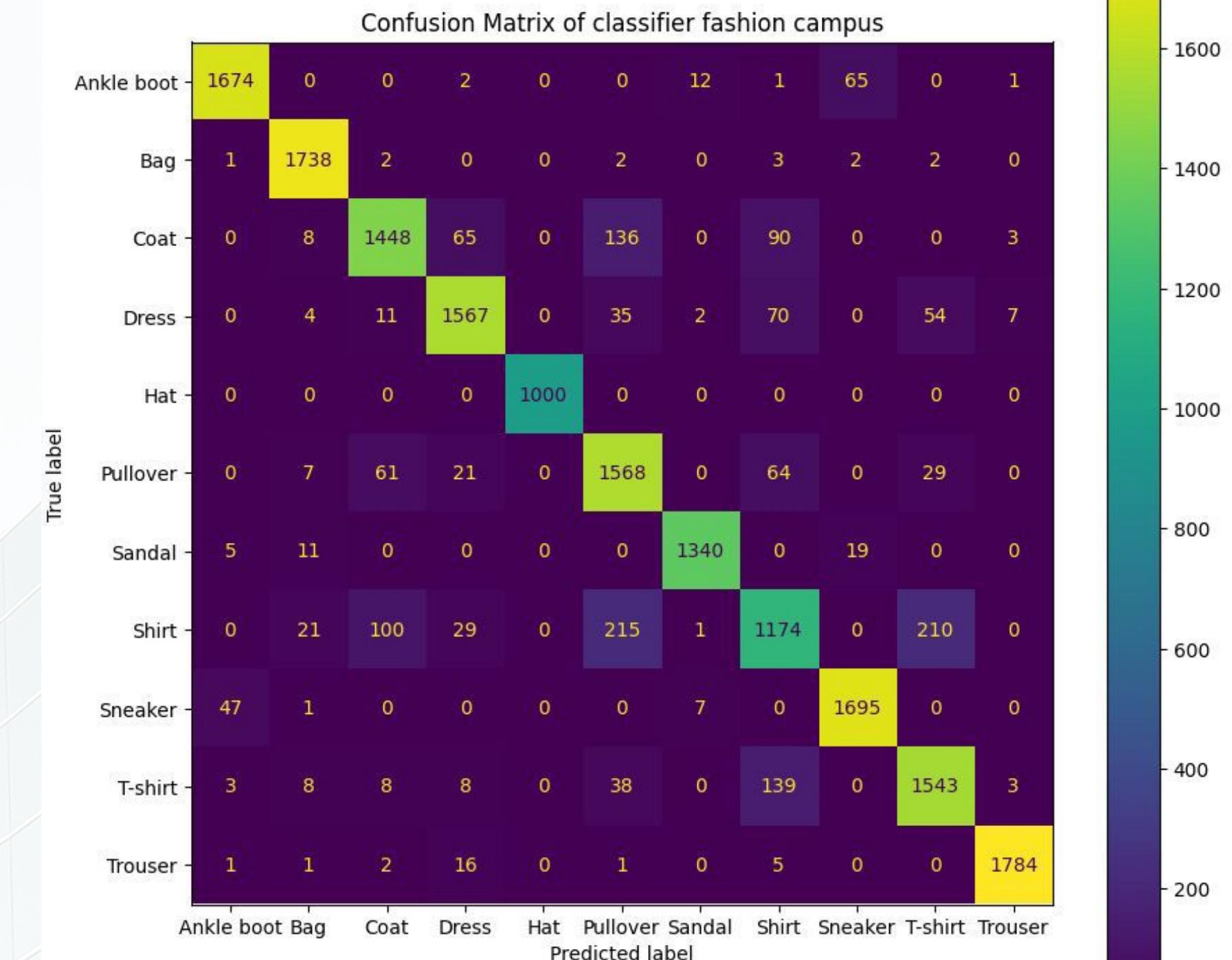
Size model Resnet18 : ~45MB

Size model VGG16 : ~500MB,

HASIL EVALUASI MODEL

RESNET 18

Precision	Recall	f1_score	Accuracy
0.90	0.90	0.90	0.90



DEMO



PENERAPAN PADA KASUS

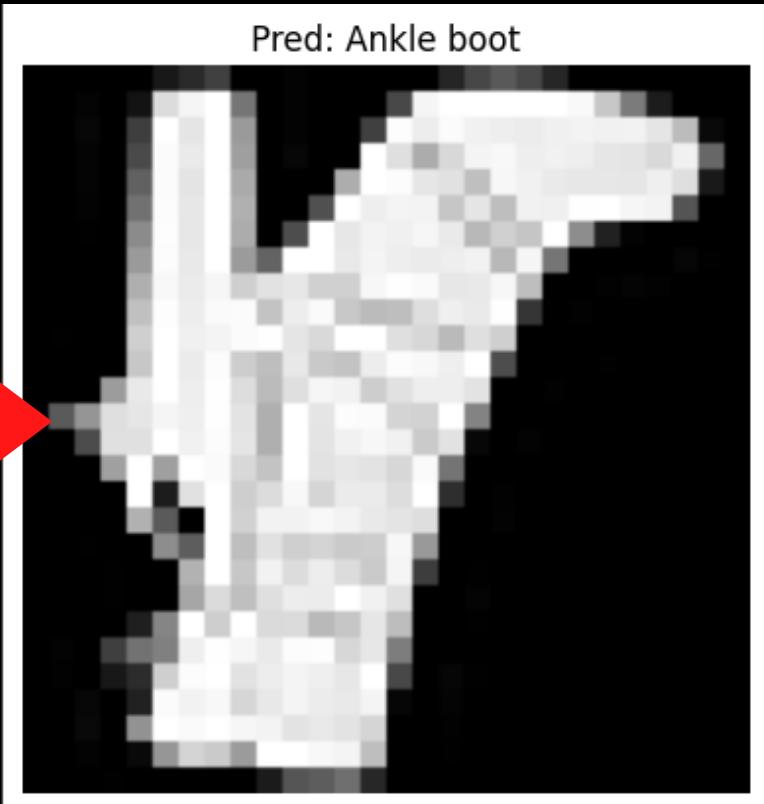
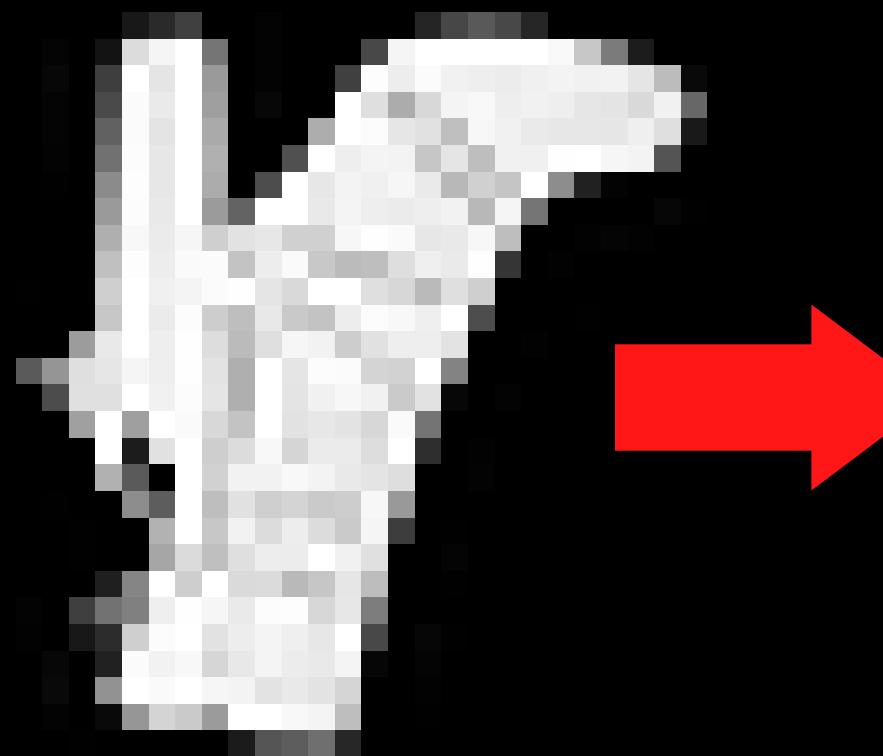
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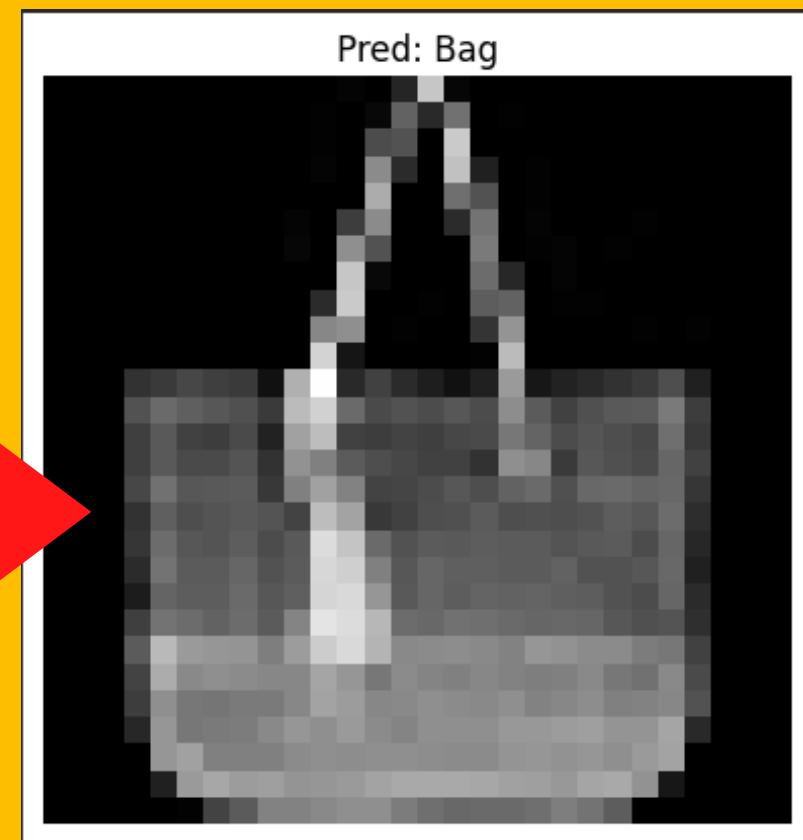
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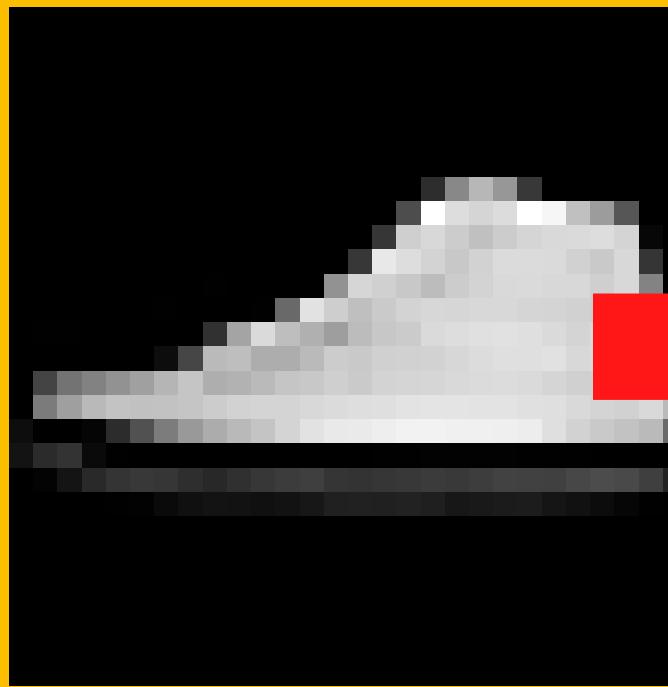


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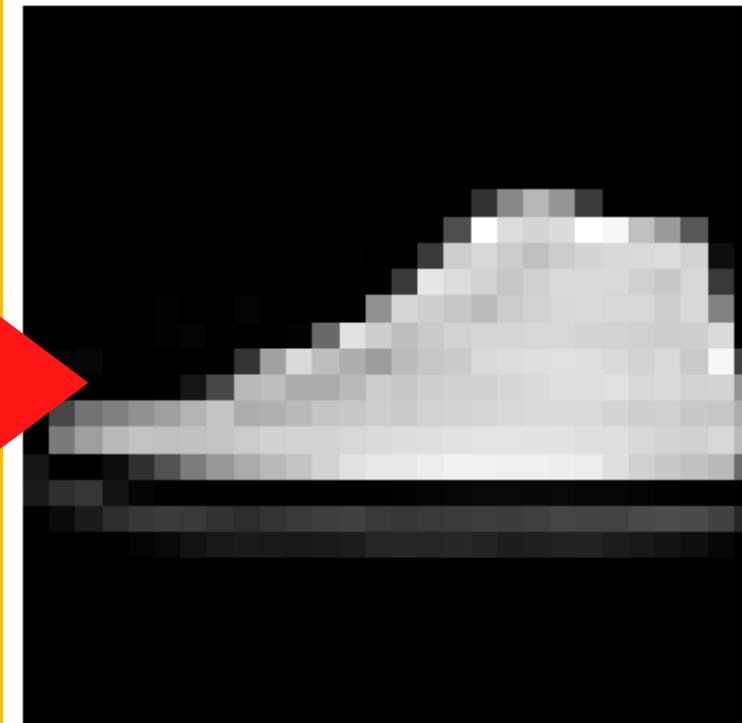


PENERAPAN PADA KASUS

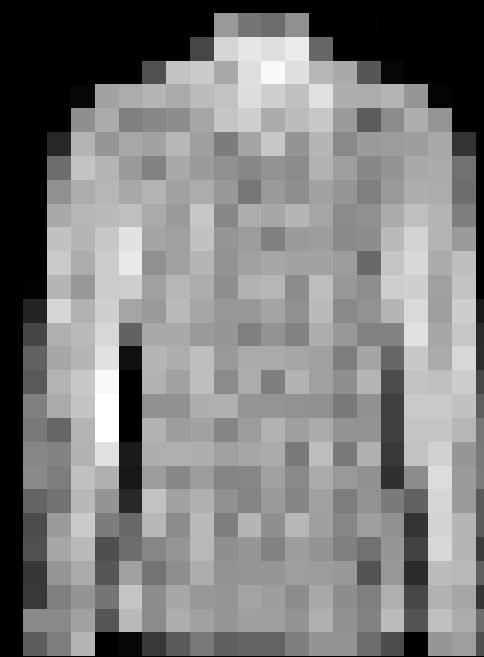
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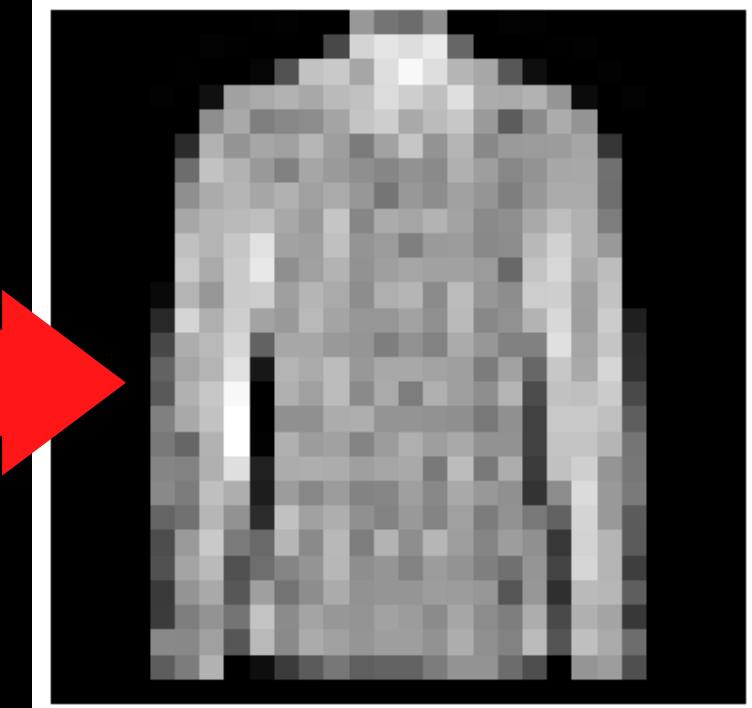
Pred: Sneaker



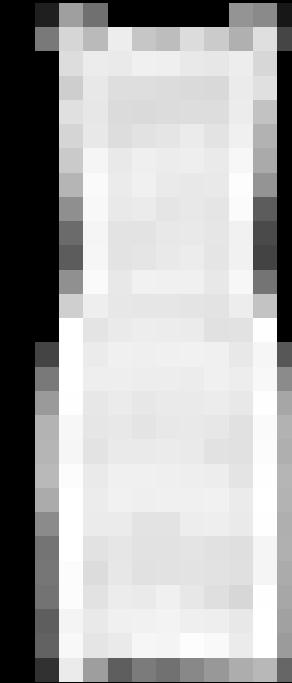
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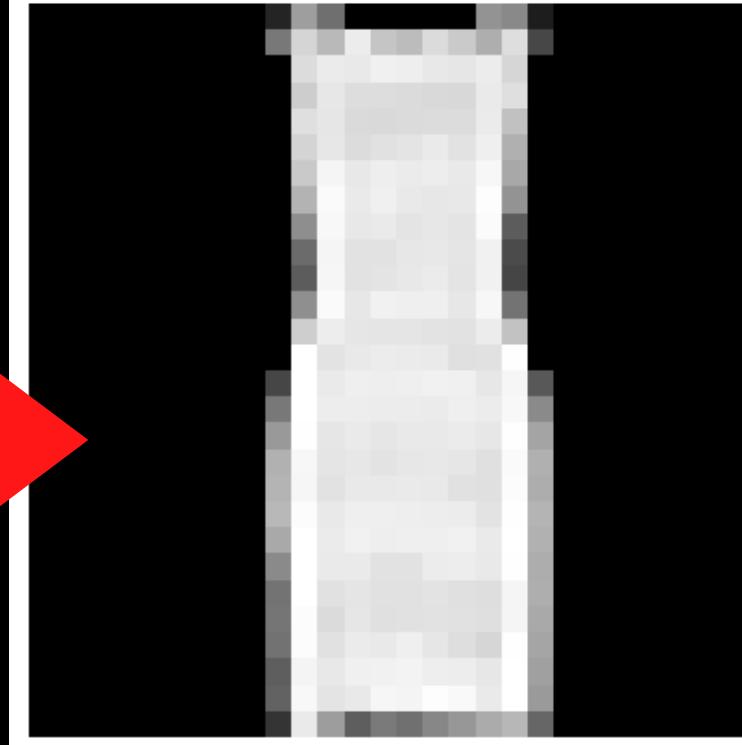
Pred: Shirt



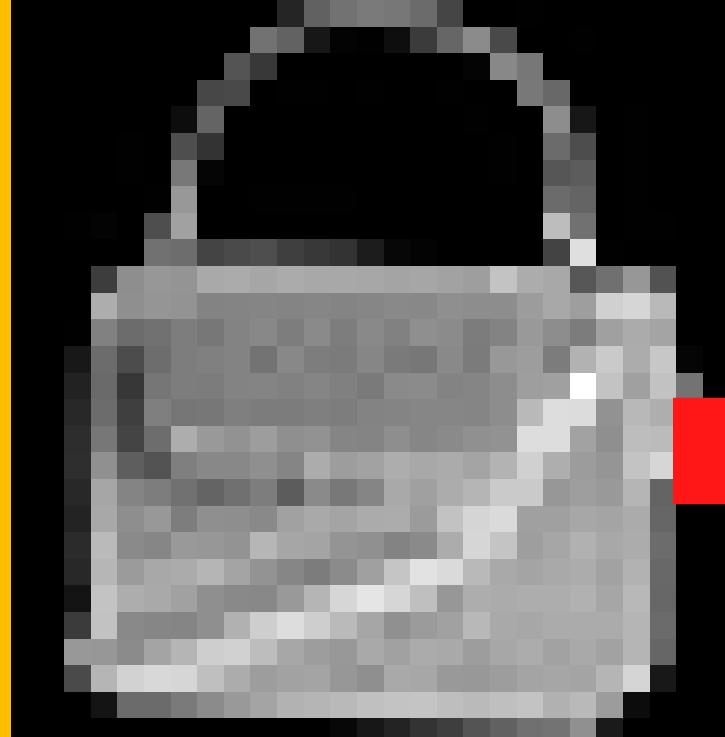
6



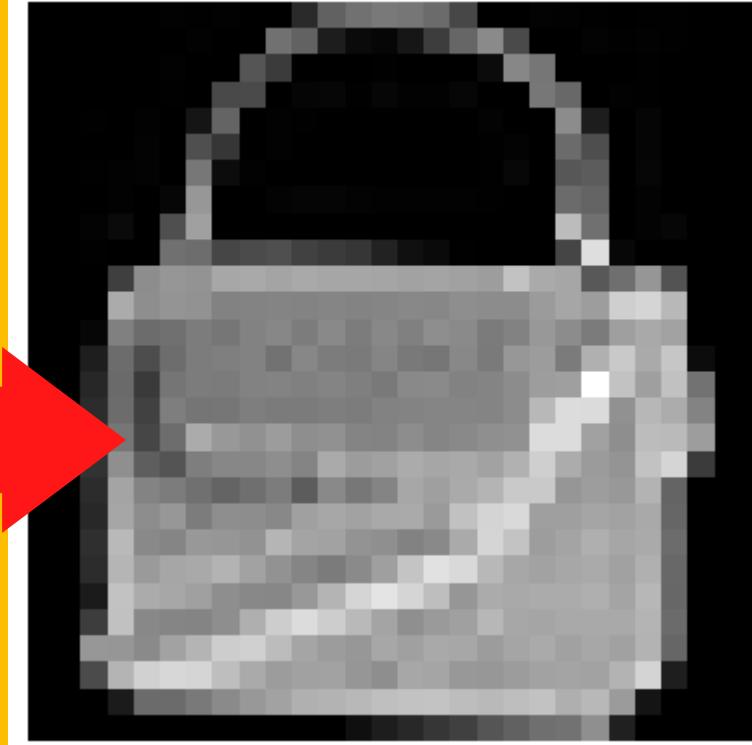
Pred: Dress



8



Pred: Bag



PENERAPAN PADA KASUS

9



10



KEBERHASILAN PADA KASUS TES JURI

10/10

Dengan tingkat akurasi model :

0.9197

KEKURANGAN MODEL KAMI

Model sedikit sulit bekerja pada objek yang memiliki background selain hitam/putih

Proses kerja lebih berat dan lambat pada gambar dengan resolusi di bawah 224 px



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INDONESIA JAYA

TERIMA KASIH!

APA ADA PERTANYAAN?

