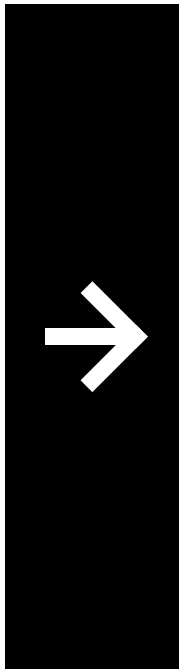
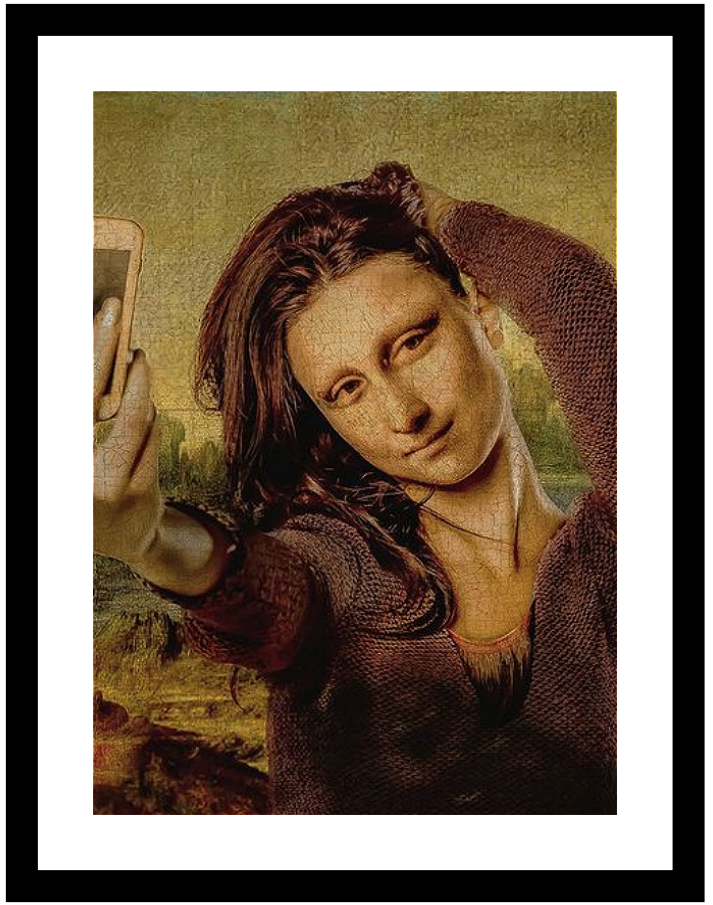
SUPER RESULOTION





Group 9

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Yin, Chao (cy2507)
Zhang, Yun (yz3384)

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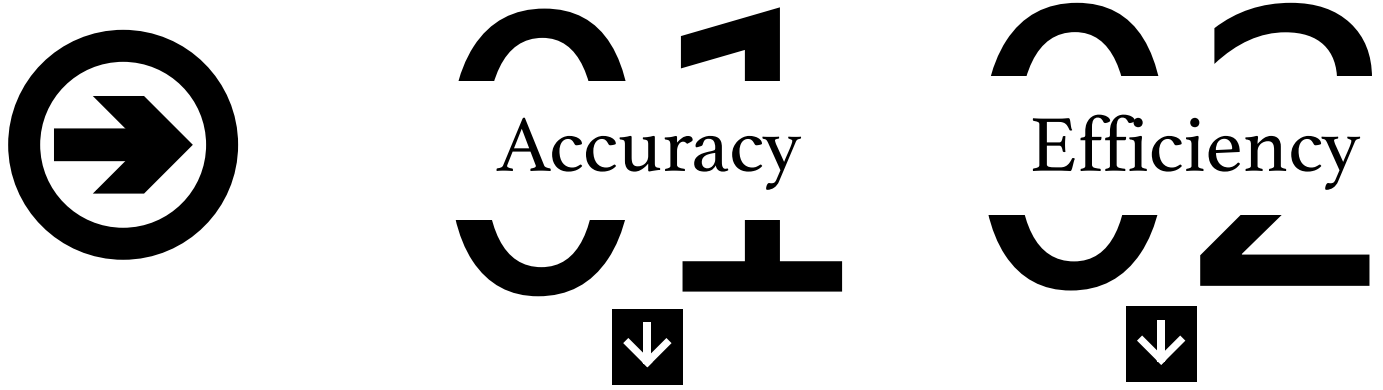
PROJECT GOAL

Produce a predicted high resolution image as output based on the blurry and low-resolution input.

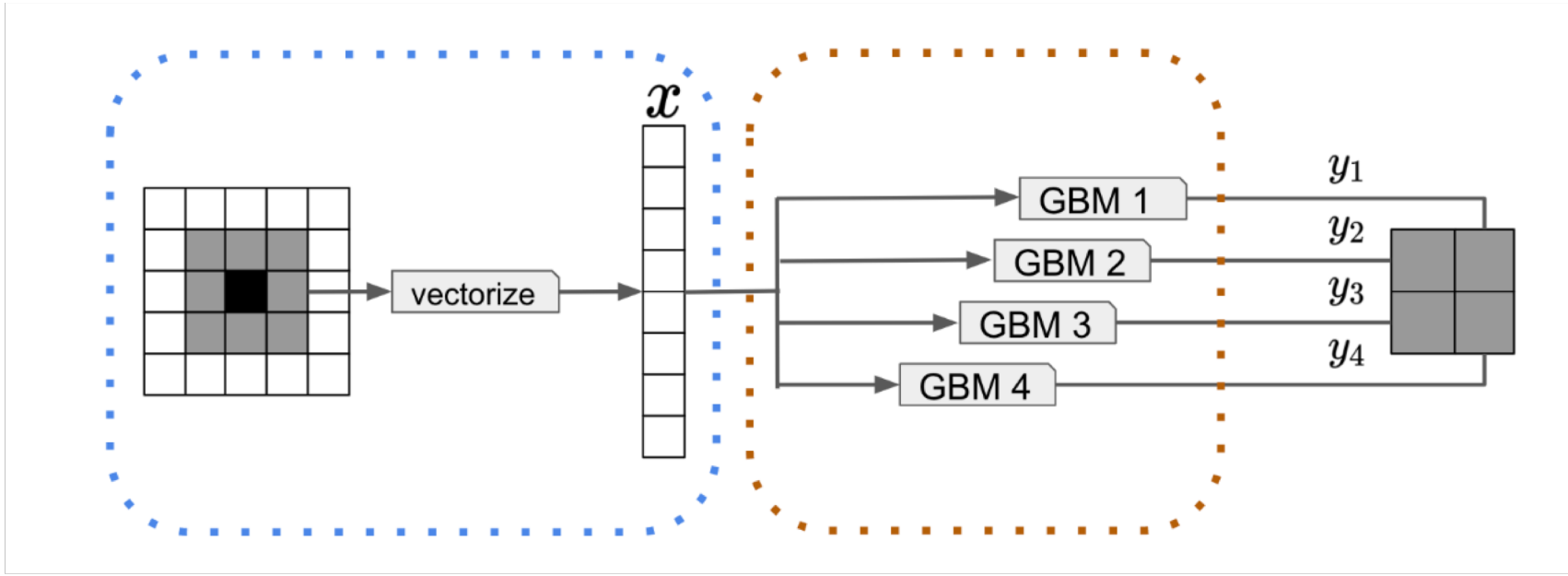


BASELINE MODEL

GBM

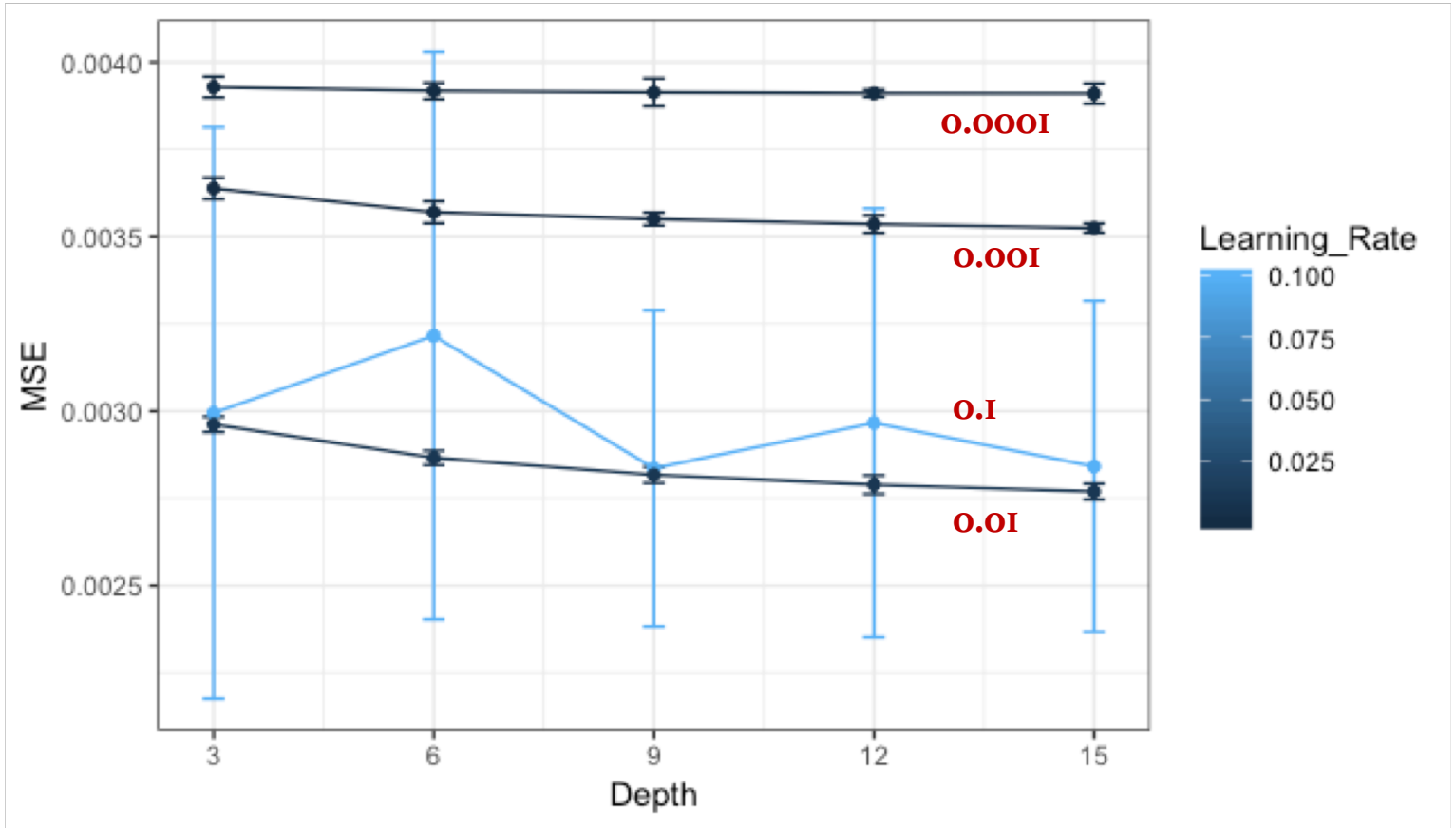
Feature Construction

Patch-based algorithm, random sample



BASELINE MODEL

Feature Extraction



GBM

N.trees = 1000

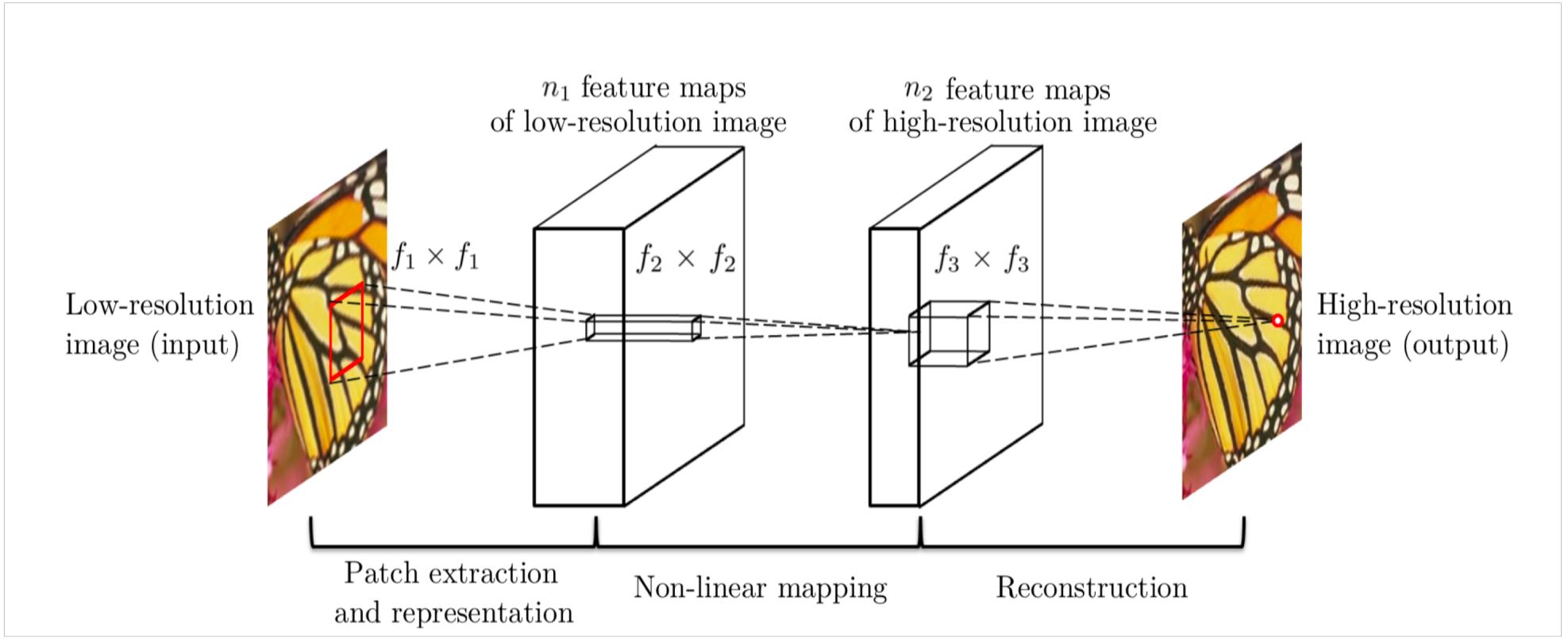
Depth = c(3, 6, 9, 12, 15)

K = 10

Learning rate = c(0.1, 0.01, 0.001, 0.0001)

ADVANCED MODEL

SRCNN



ADVANCED MODEL

SRCNN

Random Crop =30

Patch size = 33

Learning Rate = 0.0003

Validation Split = 0.8

Epoch = 100

Batch = 128

Color Chanel	Training		Validation	
	MSE	PSNR	MSE	PSNR
RGB	0.003	26.103	0.004	23.859
Y	0.002	26.771	0.004	24.541
YCrCb	0.001	30.597	0.001	28.435

IMPROVEMENT

Category	Type	GBM	SRCNN	Improved %
Time	**Feature construction**	51.77	25.71	**50%**
	Model Training	2839.15	528.71	**81%**
	In Class Testing			
Accuracy	**MSE**	0.003	0.001	**64%**
	PSNR	25.576	30.063	**18%**

Further Potential Improvement…

Baseline: Increase number of points and features…
Advanced: Increase number of patches, layers and epoch, Decrease learning rate…

IMPROVEMENT

GBM

Original

SRCNN

THE END

Thank you!

2019

3.27