



Selective Refinement Network for Dark Face Detection

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Pipeline

- Train **SRN-Res101**^[1] face detector on WIDER FACE dataset
- Utilize **MSRCR**^[2] algorithm to process DARK FACE dataset
- Fine-tune pretrained **SRN-Res101** on processed DARK FACE dataset

Reference:

[1] C. Chi, S. Zhang, J. Xing, Z. Lei, S. Z. Li, and X. Zou.

Selective refinement network for high performance face detection. AAI, 2019.

[2] S. Parthasarathy, P. Sankaran. An automated multi scale retinex with color restoration for image enhancement. NCC, 2012.

Image Enhancement



Original

Lime

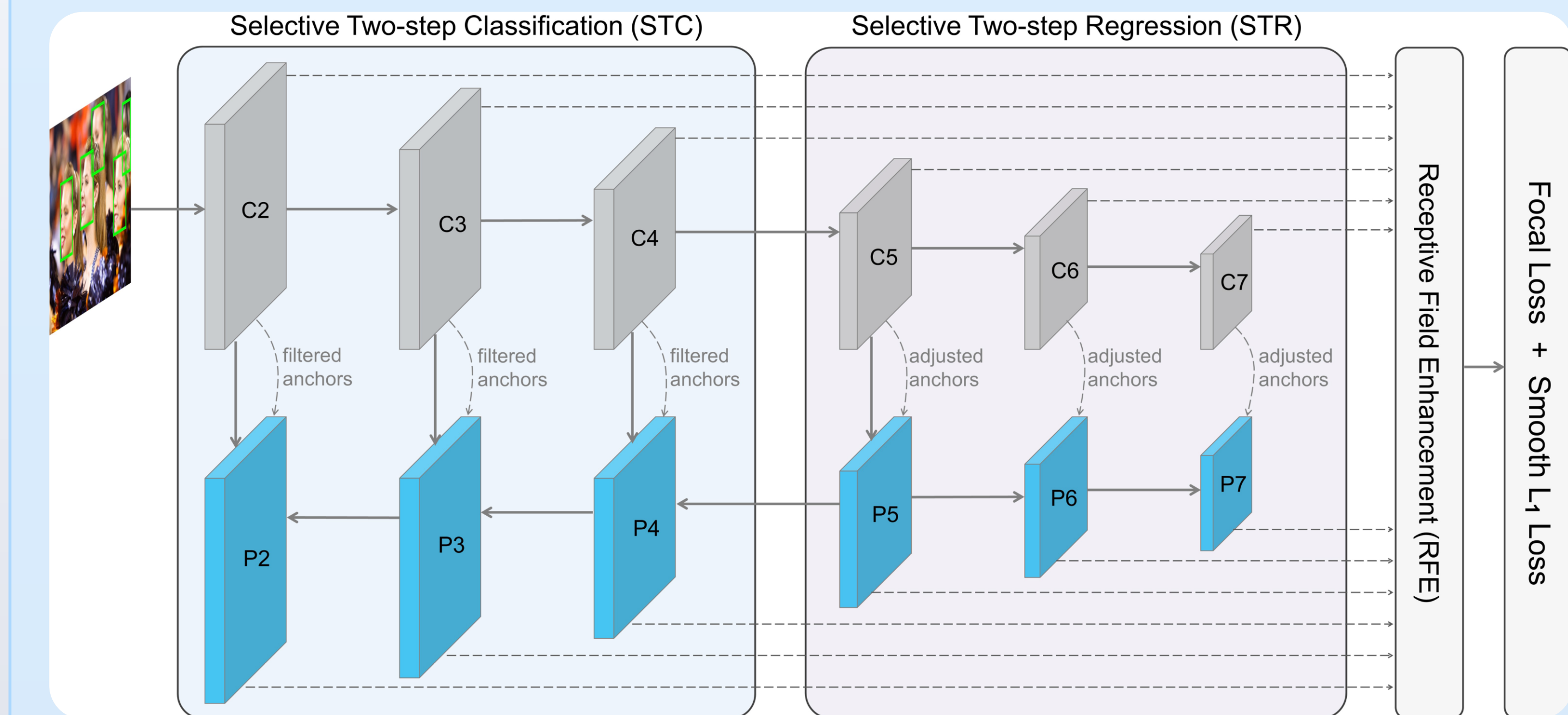
RetinexNet

Convolution

Saliency

MSRCR

Face Detection



➤ Selective Two-step Classification (**STC**)

➤ Selective Two-step Regression (**STR**)

➤ Receptive Field Enhancement (**RFE**)



Result

Training Dataset	Testing Dataset	AP
WIDER FACE	DARK FACE	47.96
WIDER FACE	Processed DARK FACE	69.07
WIDER FACE + Processed DARK FACE	Processed DARK FACE	83.85