

Input



CBS

CBS

C2f

CBS

C2f

CBS

R-DWR

CBS

R-DWR

SPPF

Backbone

Convolution + BatchNorm +
Silu activation function(CBS)

Faster Implementation of
CSP Bottleneck (C2f)

Reparam Dilation-wise
Residual (R-DWR)

Spatial Pyramid Pooling-Fast
(SPPF)

C2f with Ghost Dynamic
Convolution (C2f_GDC)

C2f_GDC

Concat

Upsample

C2f_GDC

Concat

Upsample

Concat

C2f_GDC

Neck

Task Decomposition Module
(TDM)

Deformable ConvNets v2
(DCNV2)

Scale

Conv2d

Conv2d

Conv2d

Conv2d

Conv2d

Conv2d

Conv2d

Conv2d

Conv2d

Conv2d

Conv2d

Conv2d

Region

Class

Region

Class

Region

Class

Offset&Mask

DCNV2

Multiply

Probability

Task-Aligned Prediction Head



The Output includes
bounding boxes and labels
with confidence scores.