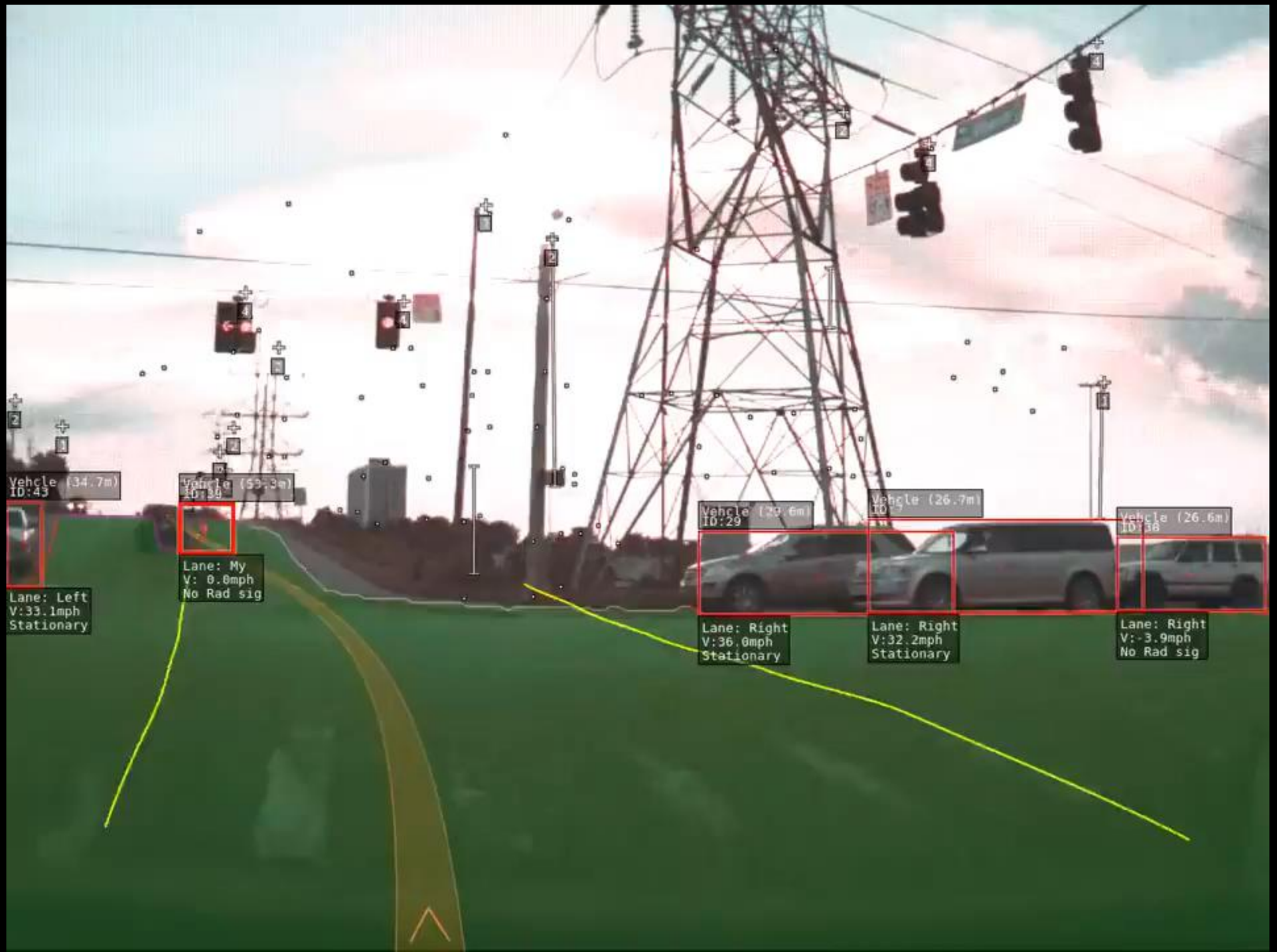

街景分割

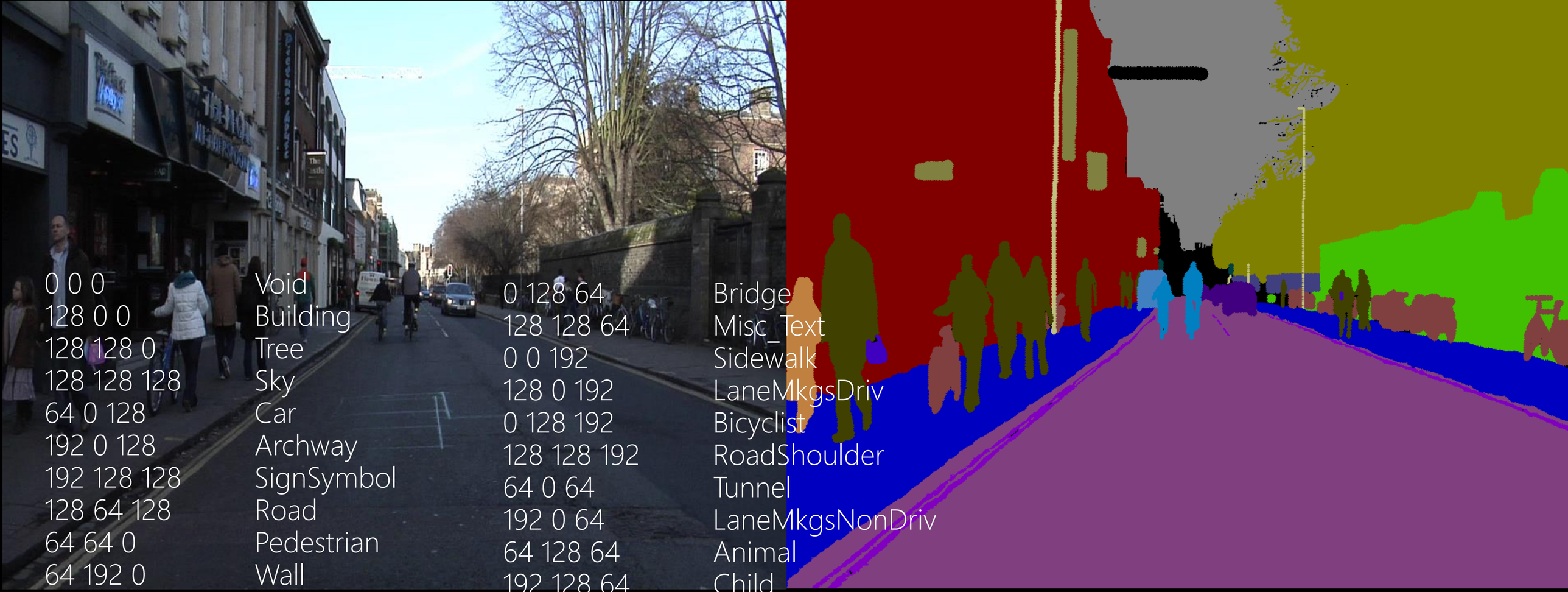
實做案例位置
github

https://github.com/AllanYiin/DeepBelief_Course5_Examples/tree/master/epoch302_街景分割

colab

https://drive.google.com/drive/folders/1i95eyMxrP1QekrcGL7mvHi3U2RVtceoZ?usp=sharing


Vehcle (34.7m)
ID:43
Lane: Left
V:33.1mph
Stationary
Lane: My
V: 0.0mph
No Rad sig
Vehcle (29.6m)
ID:29
Lane: Right
V:36.0mph
Stationary
Vehcle (26.7m)
Lane: Right
V:32.2mph
Stationary
Vehcle (26.6m)
Lane: Right
V:-3.9mph
No Rad sig



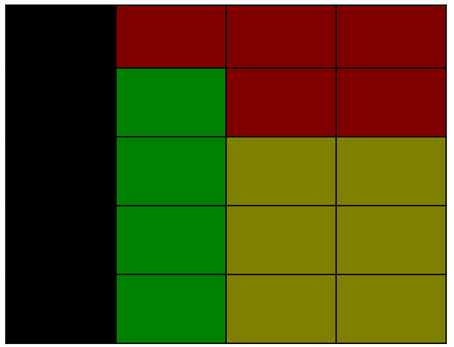
0 0 0	Void
128 0 0	Building
128 128 0	Tree
128 128 128	Sky
64 0 128	Car
192 0 128	Archway
192 128 128	SignSymbol
128 64 128	Road
64 64 0	Pedestrian
64 192 0	Wall
192 192 0	VegetationMisc
64 64 128	Fence
192 64 128	Train
64 192 128	ParkingBlock
192 192 128	Column_Pole
0 0 64	TrafficCone
0 128 64	Bridge
128 128 64	Misc_Text
0 0 192	Sidewalk
128 0 192	LaneMkgsDriv
0 128 192	Bicyclist
128 128 192	RoadShoulder
64 0 64	Tunnel
192 0 64	LaneMkgsNonDriv
64 128 64	Animal
192 128 64	Child
64 0 192	CartLuggagePram
192 0 192	MotorcycleScooter
64 128 192	SUVPickupTruck
192 128 192	Truck_Bus
0 64 64	TrafficLight
128 64 64	OtherMoving

數據集來源格式

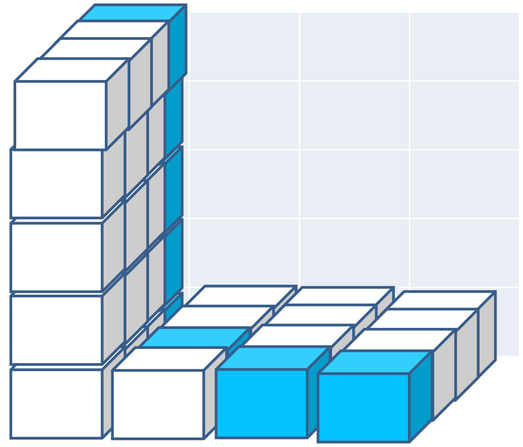
color2label

argmax

模型輸出格式



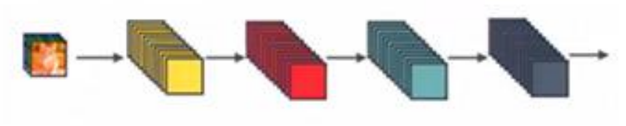
0	1	1	1
0	2	1	1
0	2	3	3
0	2	3	3
0	2	3	3



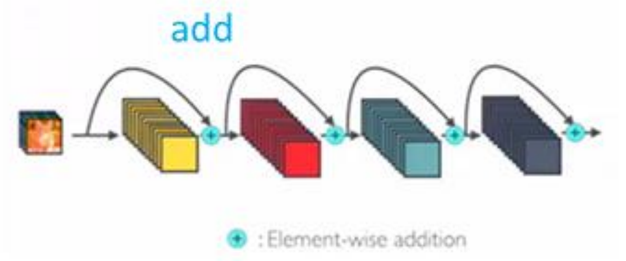
色彩遮罩
形狀(h,w,3)

標籤遮罩
形狀(h,w)

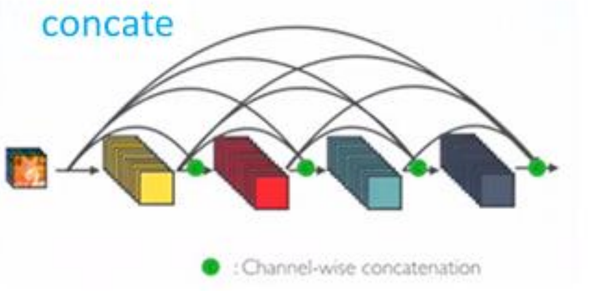
onehot遮罩
形狀(類別數,h,w)



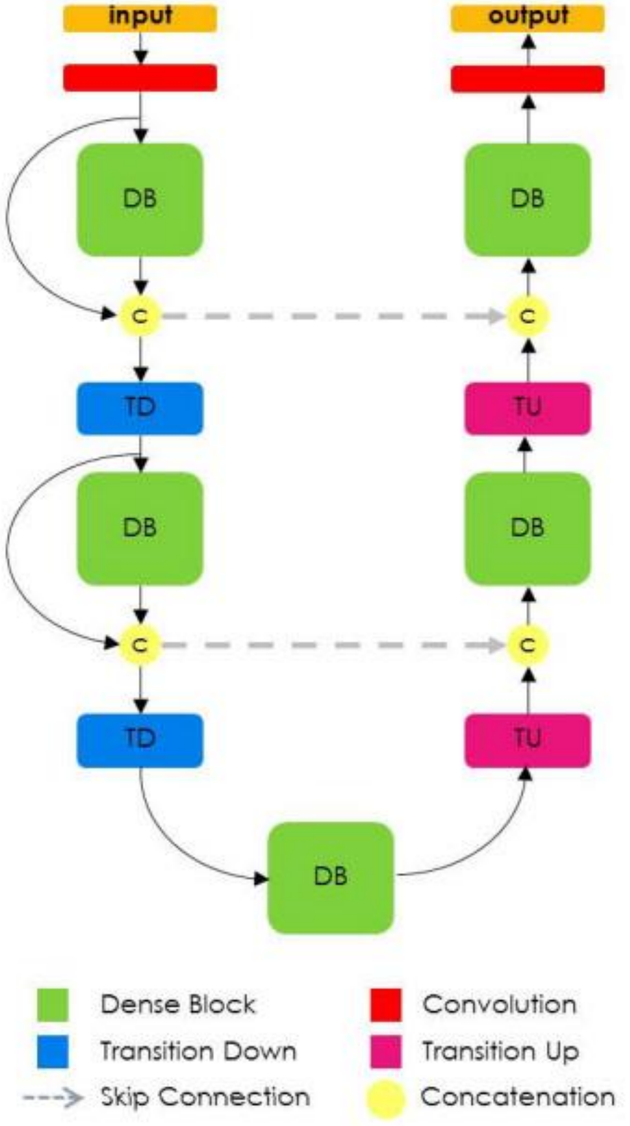
Standard Connectivity



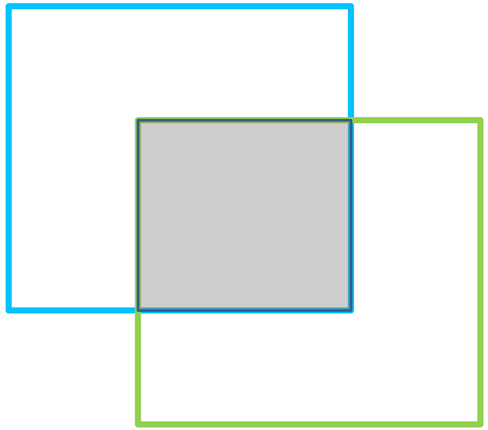
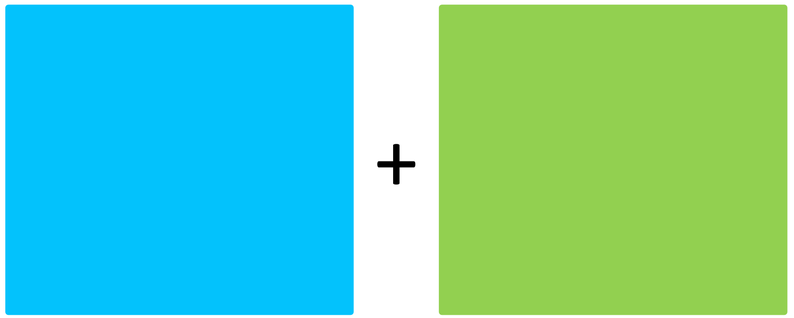
ResNet Connectivity



Dense Connectivity

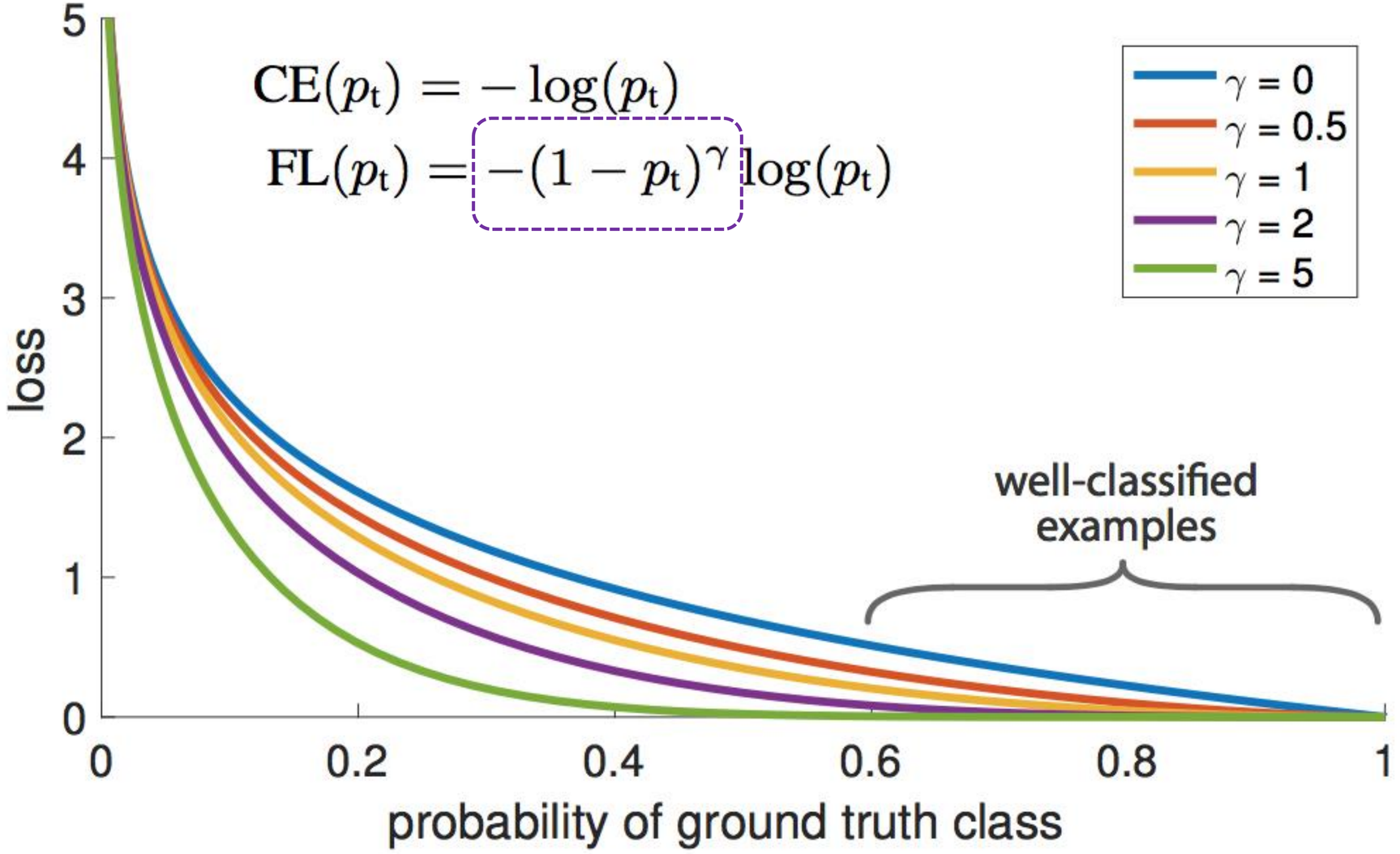


Dice Coefficient

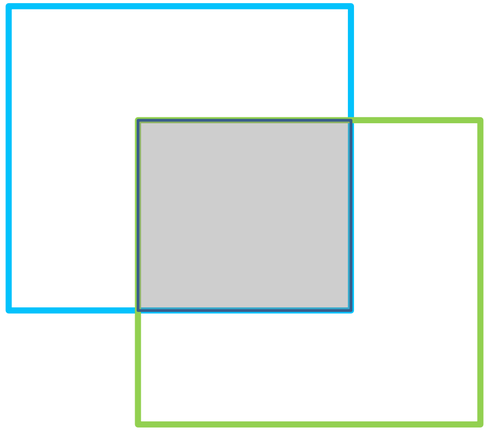
$$2 * \frac{\text{  }}{\text{  }}$$

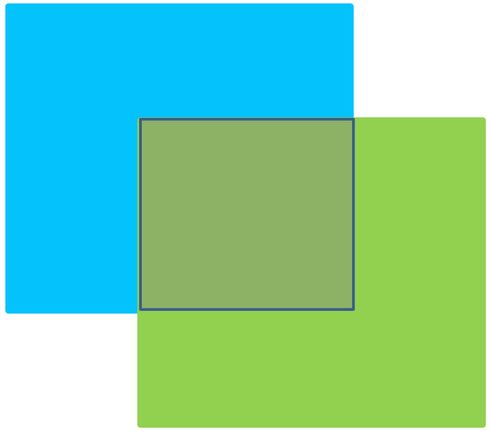
Dice Loss= 1-Dice Coefficient

Focal Loss

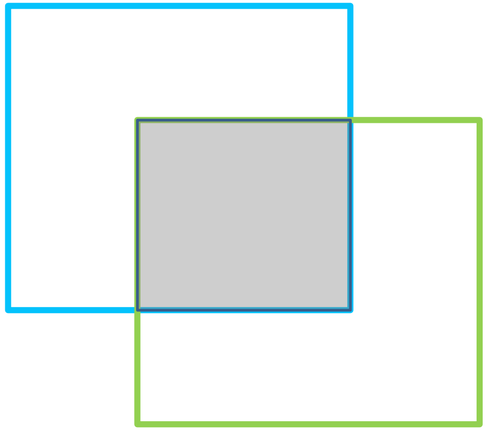

$\mathrm{CE}(p_t) = -\log(p_t)$
$\mathrm{FL}(p_t) = -(1-p_t)^{\gamma}\log(p_t)$
$\gamma = 0$
$\gamma = 0.5$
$\gamma = 1$
$\gamma = 2$
$\gamma = 5$
well-classified examples
loss
probability of ground truth class
0
1
2
3
4
5
0
0.2
0.4
0.6
0.8
1

IOU





Pixel Accuracy




Q&A