

---

# PathOs Weekly Meeting

**AI/Algorithm part**

Hangyeol Jung, Hyunseo Chung

Jan, 24, 2025

# Encoder-Decoder with Atrous Separable Convolution for Semantic Image Segmentation

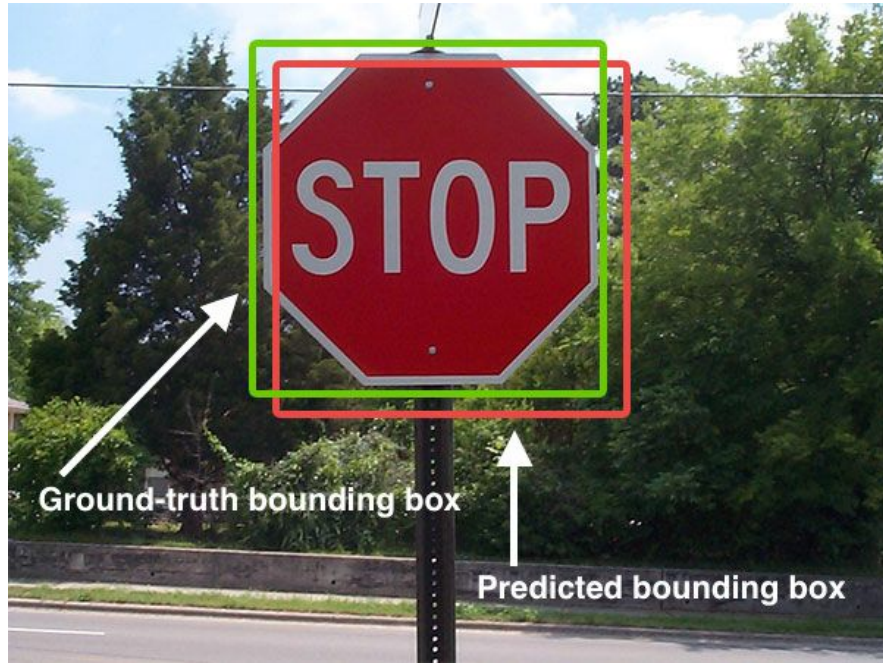
Liang-Chieh Chen, Yukun Zhu, George Papandreou, Florian Schroff, and  
Hartwig Adam

Google Inc.

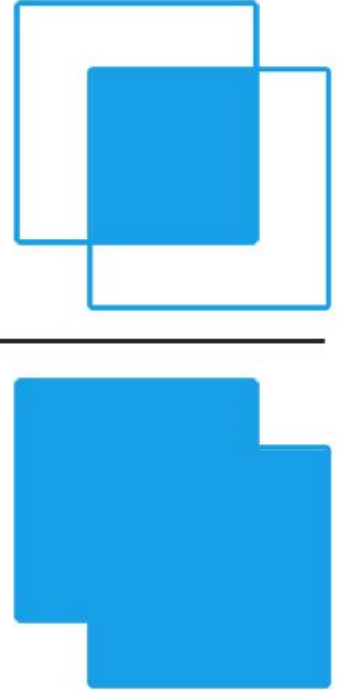
{lcchen, yukun, gpapan, fschroff, hadam}@google.com

<https://github.com/VainF/DeepLabV3Plus-Pytorch>

# IoU Score



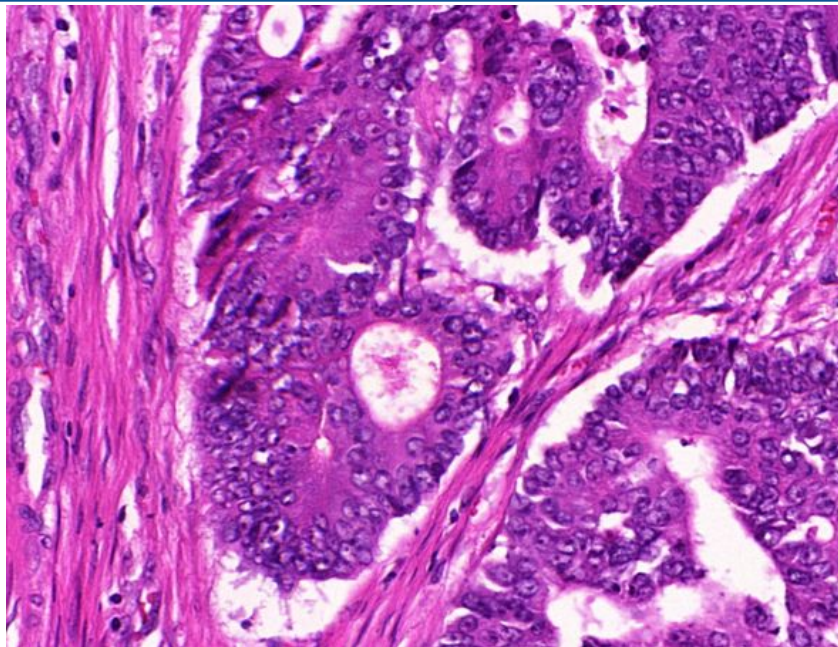
$$\text{IoU} = \frac{\text{Area of Overlap}}{\text{Area of Union}}$$



Source: [https://en.wikipedia.org/wiki/Jaccard\\_index](https://en.wikipedia.org/wiki/Jaccard_index)

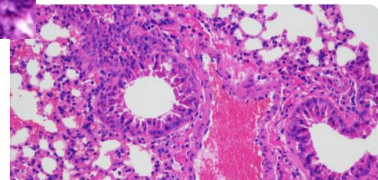
# Model Scale Comparison

---



## **GlaS@MICCAI'2015: Gland Segmentation**

Gland Segmentation in Colon Histology Images Challenge



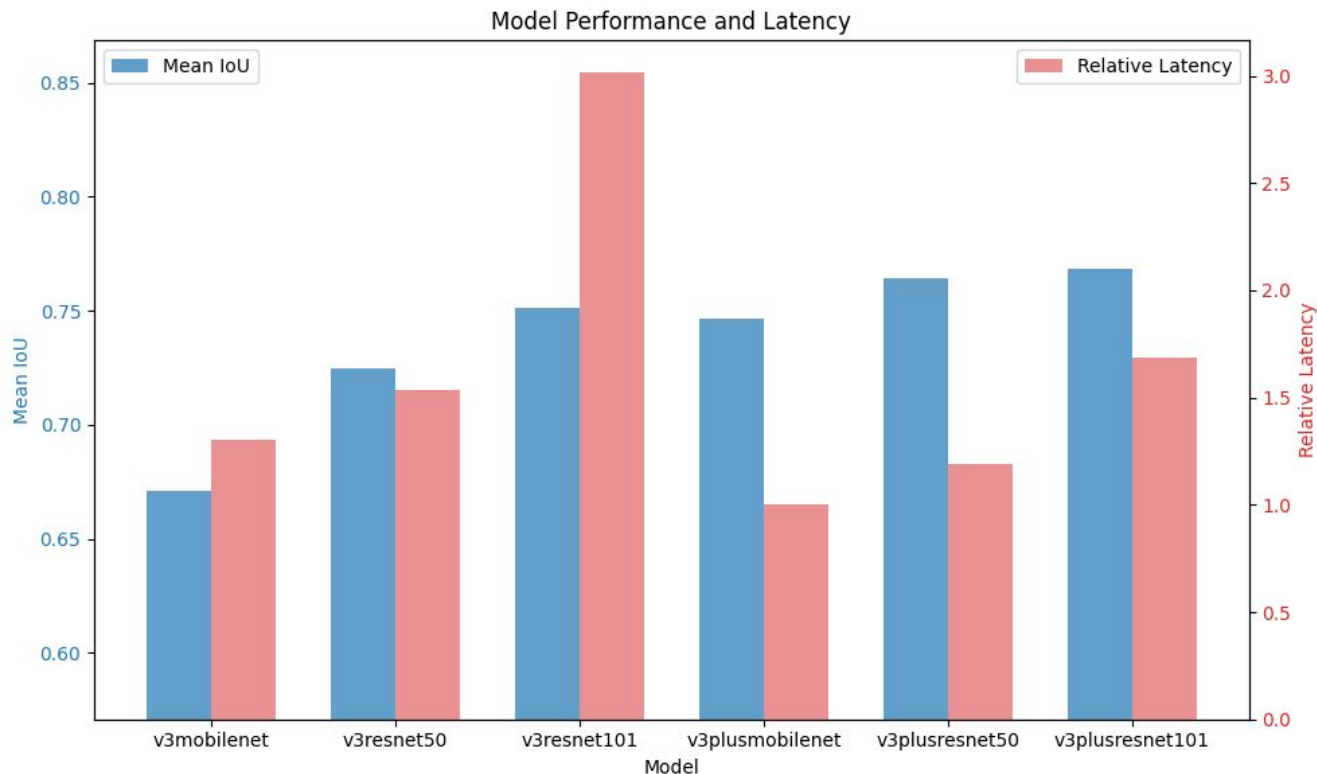
# Model Scale Comparison

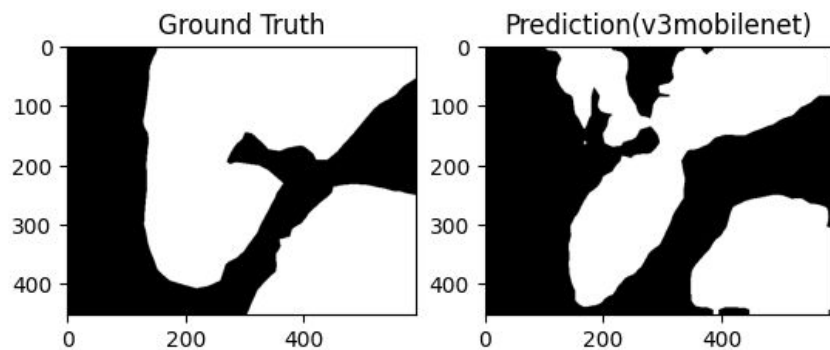
TrainSet: *Warwick QU gland data*

Split: *train : test = 8 : 2*

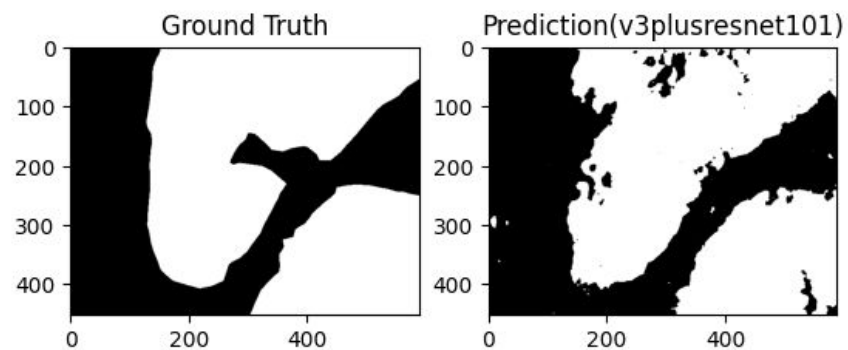
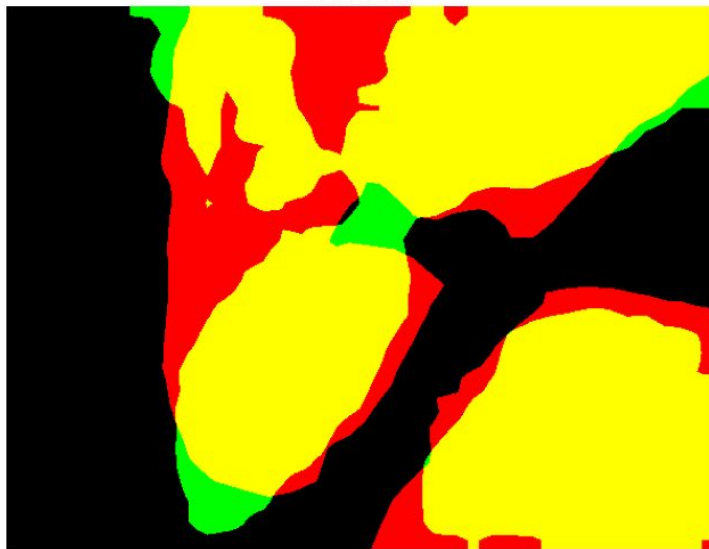
Environment: *Macbook M2 mps*

Epochs: *15*

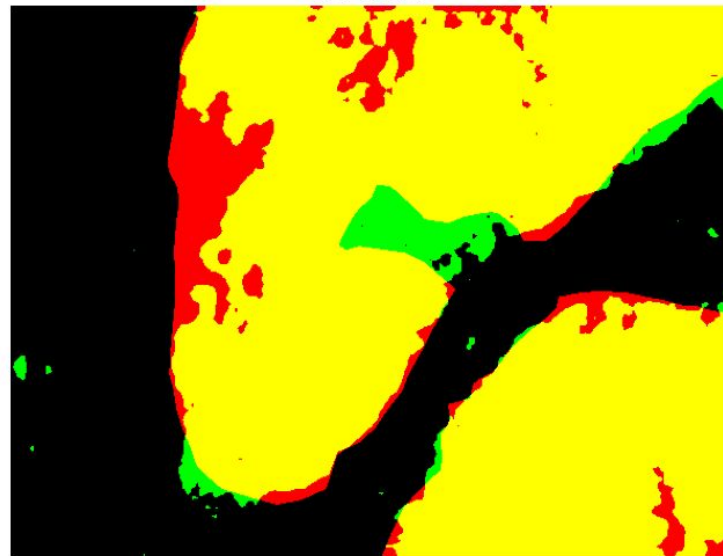




Overlap Visualization  
(Red: Ground Truth, Green: Prediction, Yellow: Overlap)  
IoU: 0.7297



Overlap Visualization  
(Red: Ground Truth, Green: Prediction, Yellow: Overlap)  
IoU: 0.8477



# The Property of Human-in-the-loop Model

Full-automated model

0.5823

0.6525

0.6861

0.6742

0.6815

Oracle model (GT)

0.5823

0.8853

0.9174

0.9236

0.9487

Human-in-the-loop

model

0.5823

0.6863

0.7472

0.7691

0.8401

Human-in-the-loop

model 10%

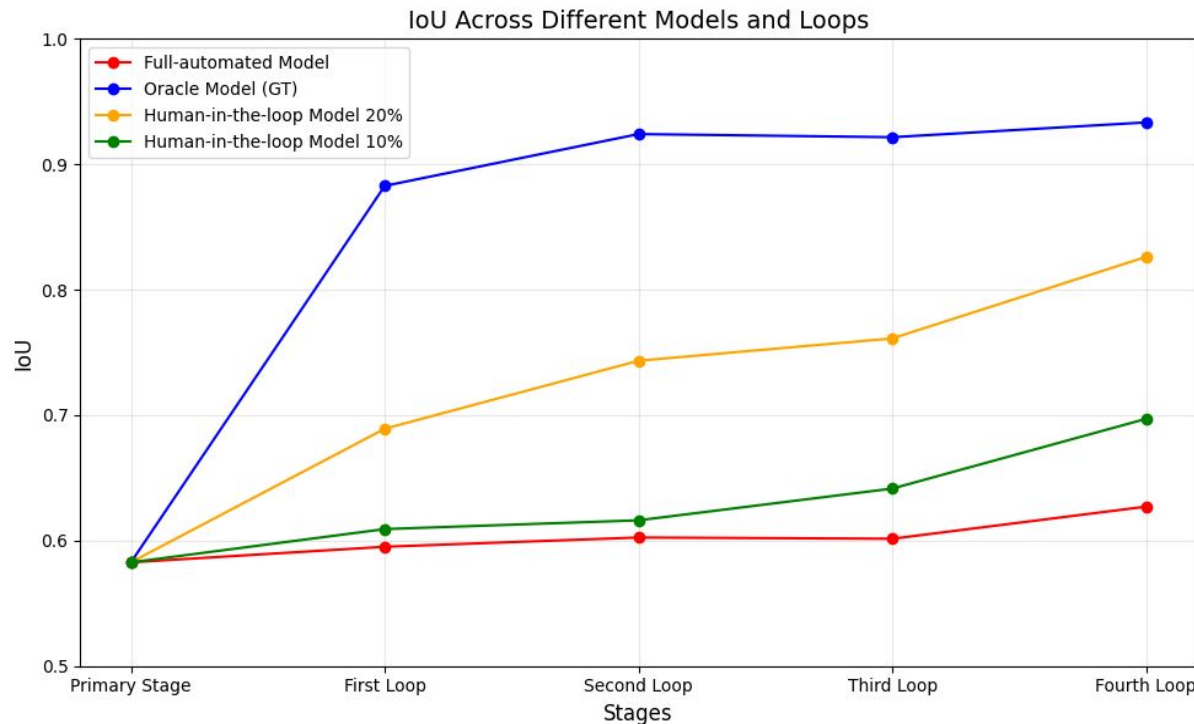
0.5827

0.6092

0.6162

0.6415

0.6971



TrainSet: Warwick QU gland data

Split: train : test = 8 : 2

Environment: Colab/A100 GPU

Epochs: 20