

Deep Restore

Architecture Comparision Server

September 6, 2018

Description

- ▶ Unet, Densenet, Early, Late and Late-Late use patches of size 128x128 + mirror padding (padding size depending on architecture)
- ▶ All testes architectures use the information of previous, current and next frame
- ▶ 1000 iterations
- ▶ augmented training set
- ▶ last activation function: sigmoid
- ▶ train and test data visualized for early stopping
- ▶ accuracy and loss for each architecture and early stopping

Early Combine

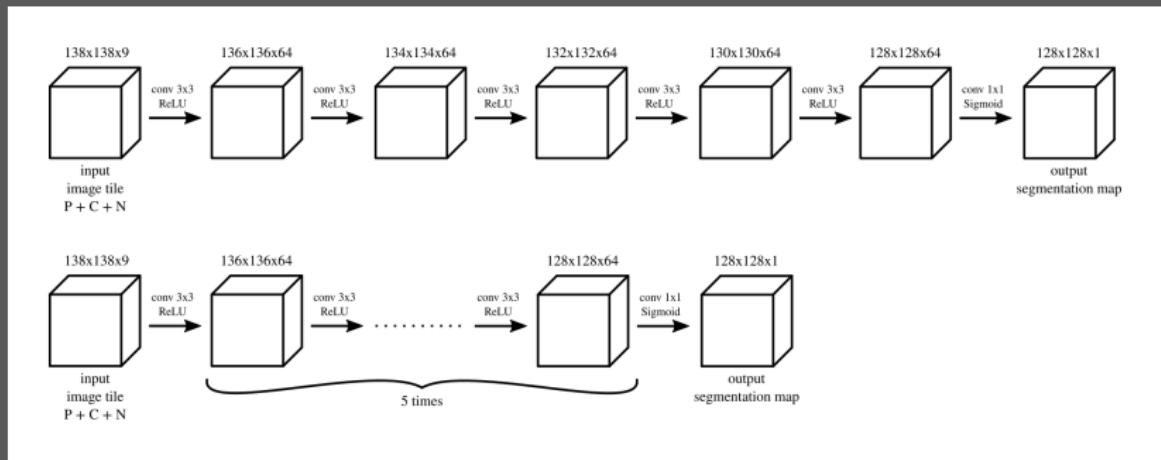


Figure: Early

Late Combine

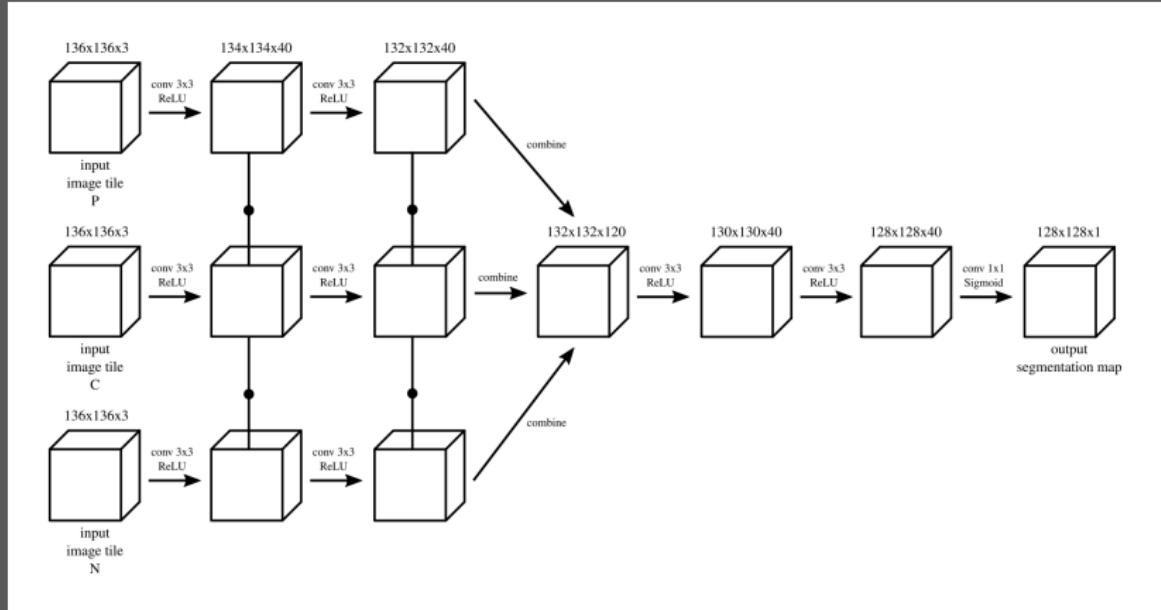


Figure: Late

Late Late Combine

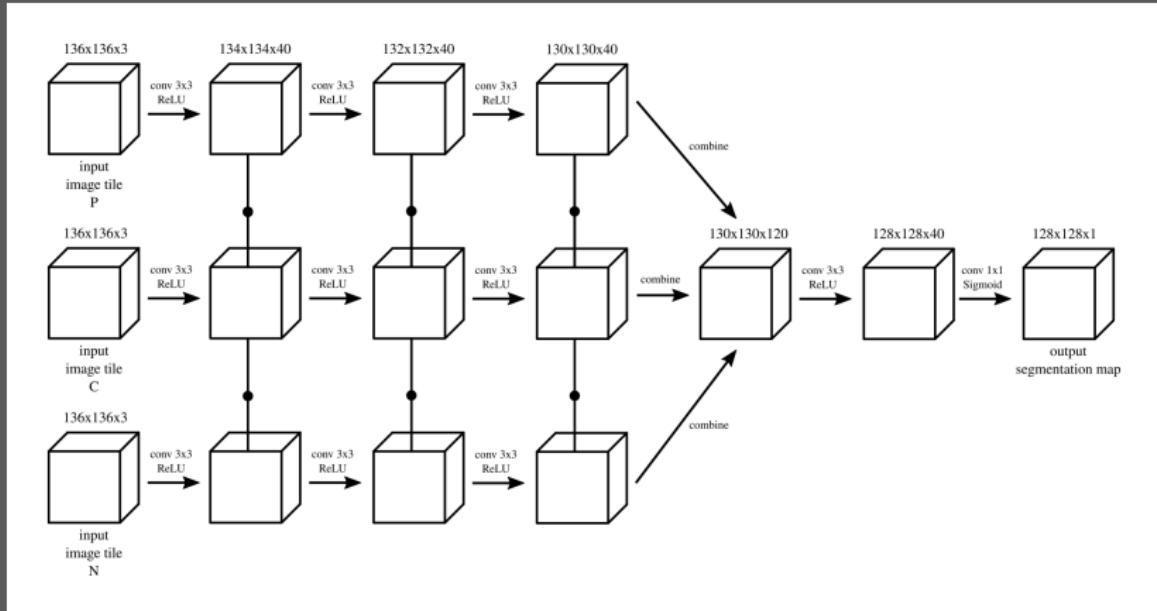


Figure: Late Late

Densenet

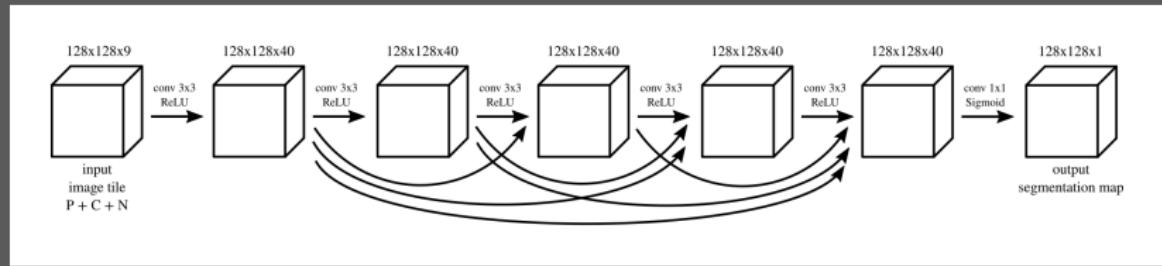


Figure: Densenet

Unet

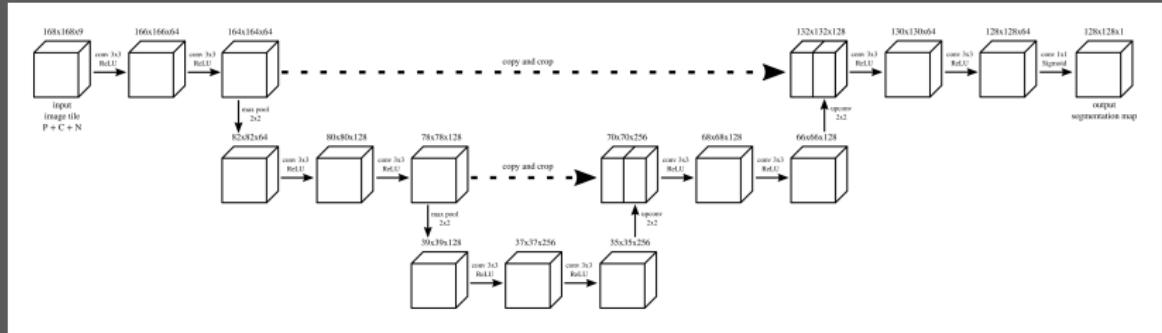
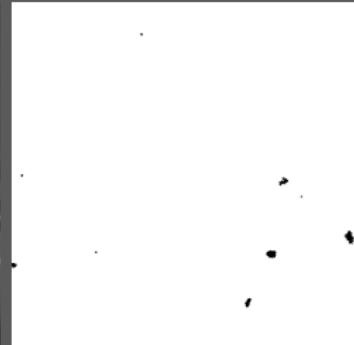


Figure: Unet

Train - Ex1



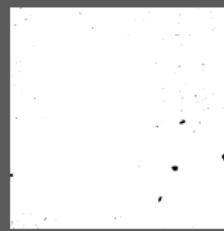
(a) Input



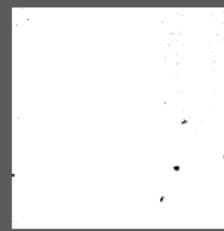
(b) GT



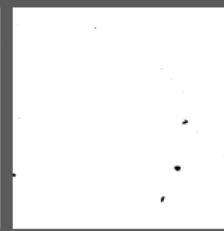
(a) early



(b) late



(c) late late



(d) densenet

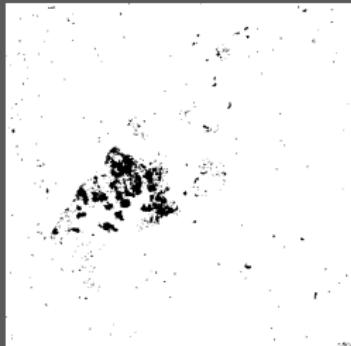


(e) unet

Train - Ex2



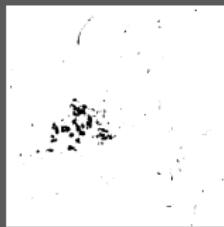
(a) Input



(b) GT



(a) early



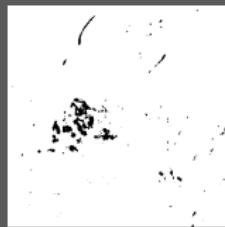
(b) late



(c) late late



(d) densenet



(e) unet

Train - Ex3



(a) Input

(b) GT



(a) early

(b) late

(c) late late

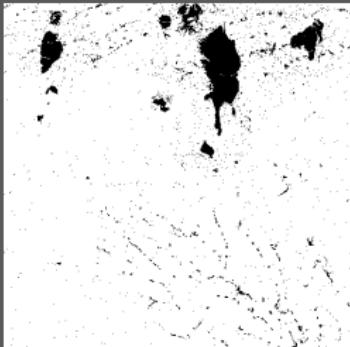
(d) densenet

(e) unet

Train - Ex4



(a) Input



(b) GT



(a) early



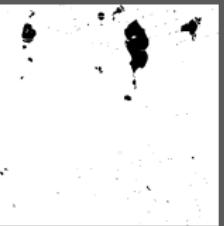
(b) late



(c) late late



(d) densenet



(e) unet

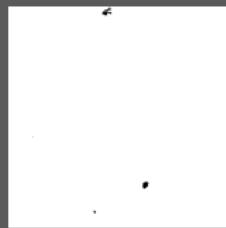
Train - Ex5



(a) Input



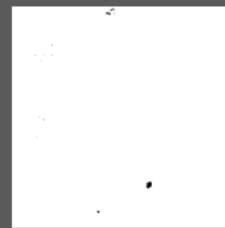
(b) GT



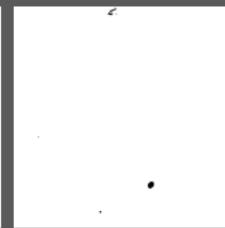
(a) early



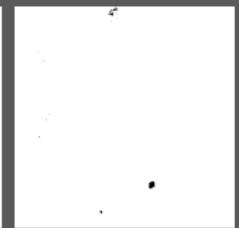
(b) late



(c) late late



(d) densenet

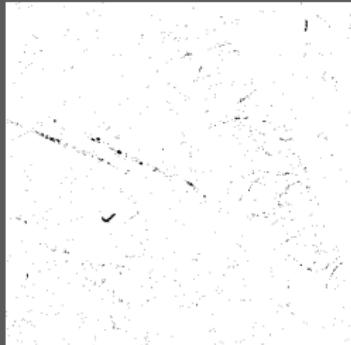


(e) unet

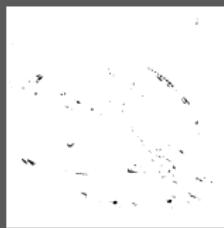
Train - Ex6



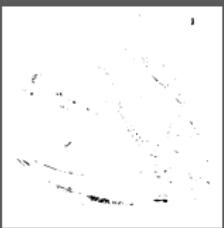
(a) Input



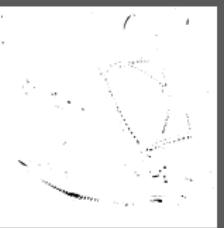
(b) GT



(a) early



(b) late



(c) late late



(d) densenet

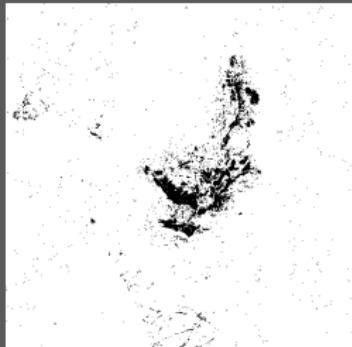


(e) unet

Train - Ex7



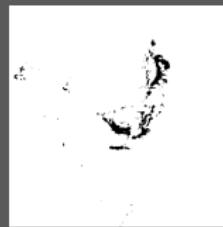
(a) Input



(b) GT



(a) early



(b) late



(c) late late



(d) densenet



(e) unet

Train - Ex8



(a) Input



(b) GT



(a) early



(b) late



(c) late late



(d) densenet

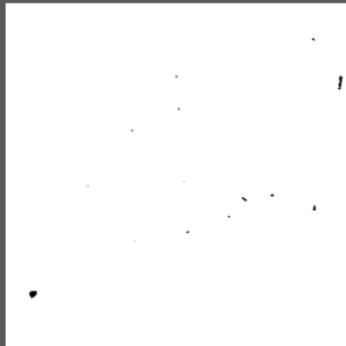


(e) unet

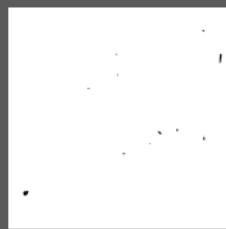
Train - Ex9



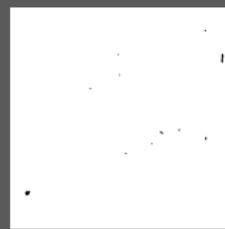
(a) Input



(b) GT



(a) early



(b) late



(c) late late



(d) densenet

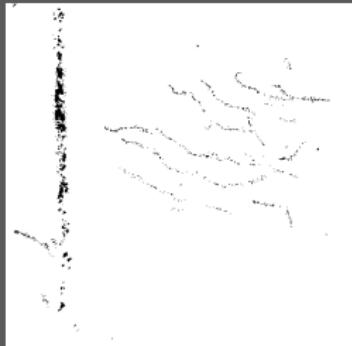


(e) unet

Train - Ex10



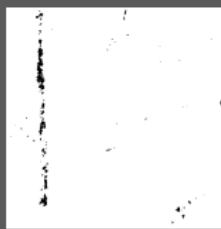
(a) Input



(b) GT



(a) early



(b) late



(c) late late



(d) densenet

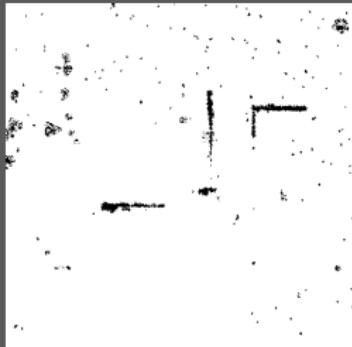


(e) unet

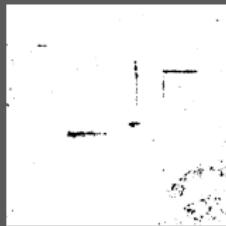
Train - Ex11



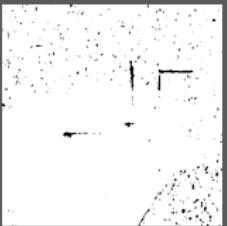
(a) Input



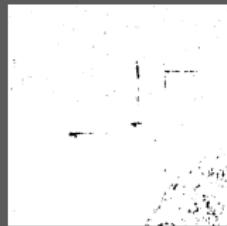
(b) GT



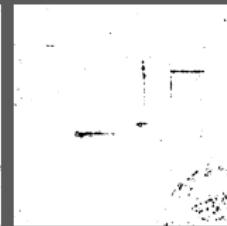
(a) early



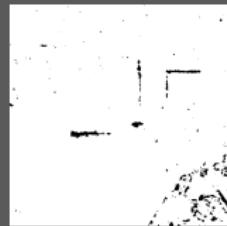
(b) late



(c) late late

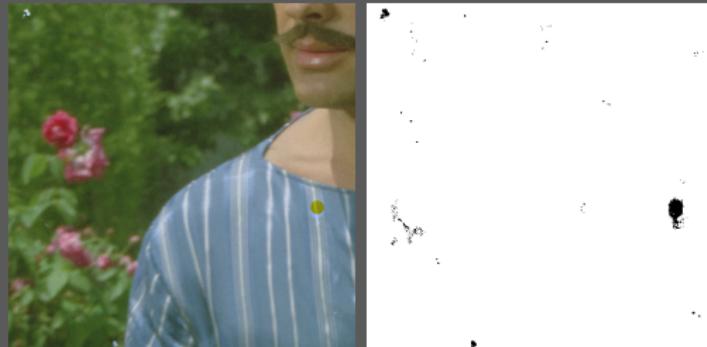


(d) densenet



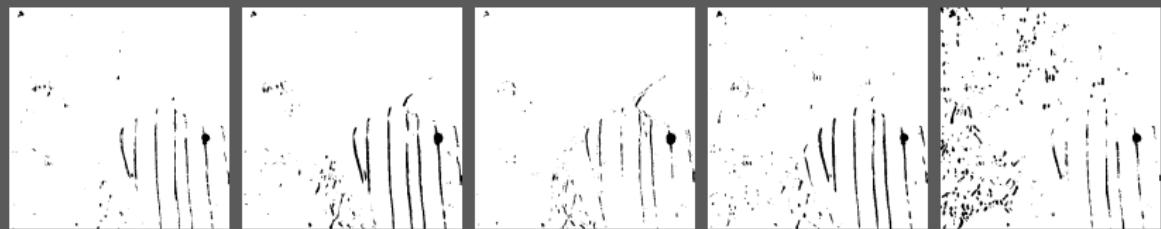
(e) unet

Train - Ex12



(a) Input

(b) GT



(a) early

(b) late

(c) late late

(d) densenet

(e) unet

Train - Ex13



(a) Input



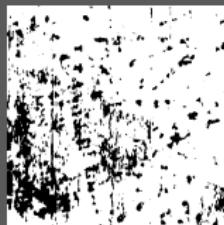
(b) GT



(a) early



(b) late



(c) late late



(d) densenet

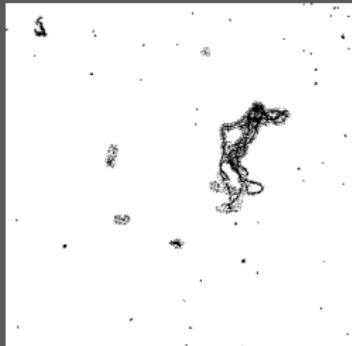


(e) unet

Train - Ex14



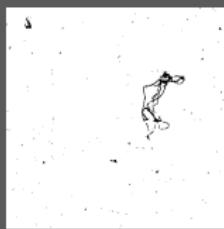
(a) Input



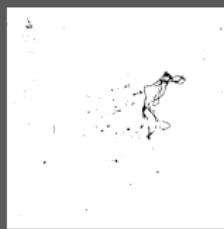
(b) GT



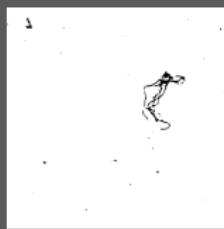
(a) early



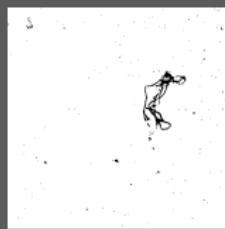
(b) late



(c) late late



(d) densenet

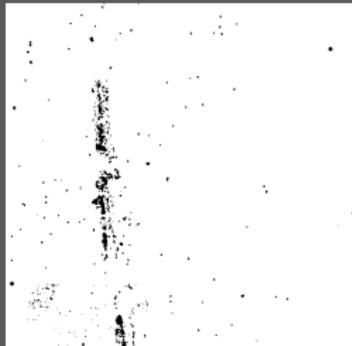


(e) unet

Train - Ex15



(a) Input



(b) GT



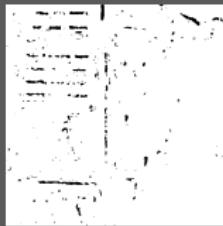
(a) early



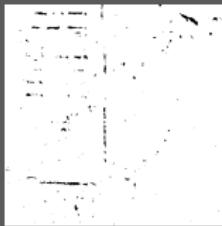
(b) late



(c) late late

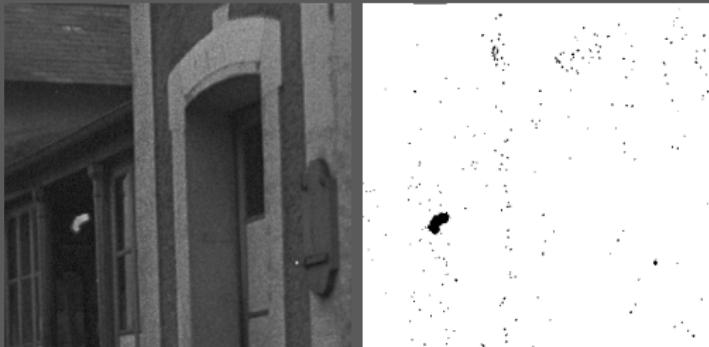


(d) densenet



(e) unet

Ex1



(a) Input

(b) GT



(a) early

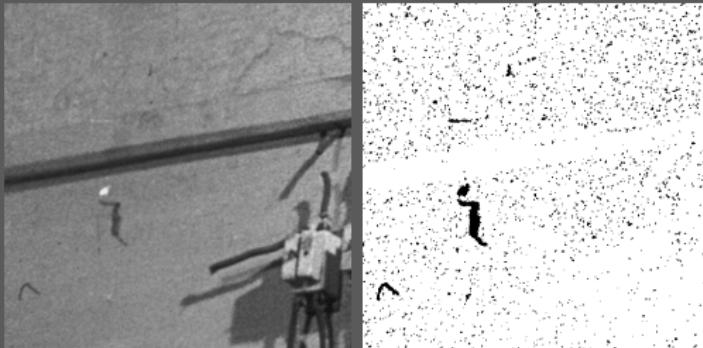
(b) late

(c) late late

(d) densenet

(e) unet

Ex2



(a) Input

(b) GT



(a) early

(b) late

(c) late late

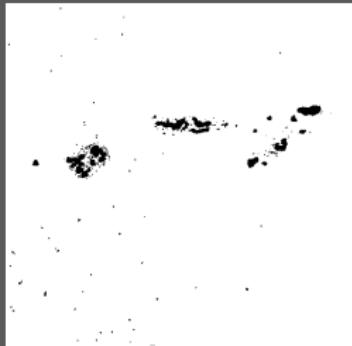
(d) densenet

(e) unet

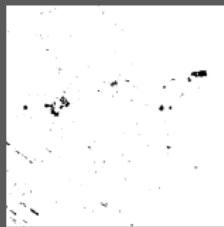
Ex3



(a) Input



(b) GT



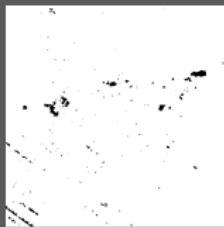
(a) early



(b) late



(c) late late

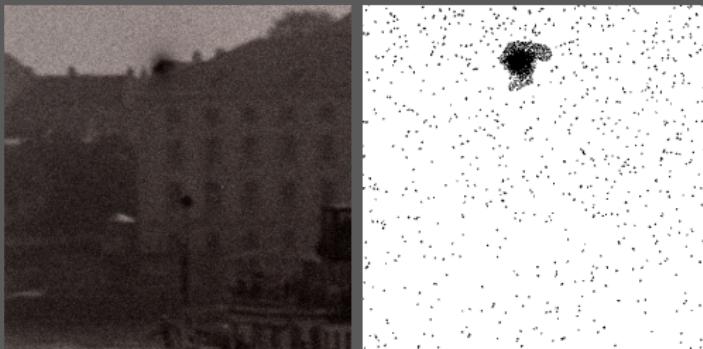


(d) densenet



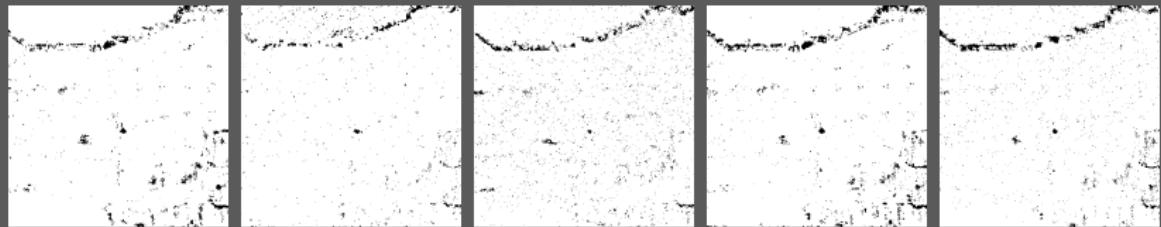
(e) unet

Ex4



(a) Input

(b) GT



(a) early

(b) late

(c) late late

(d) densenet

(e) unet

Ex5



(a) Input

(b) GT



(a) early

(b) late

(c) late late

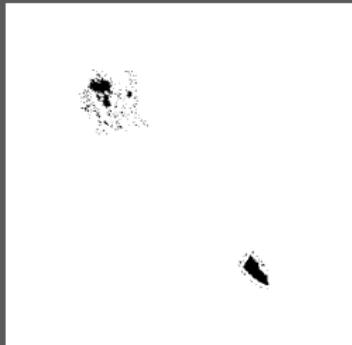
(d) densenet

(e) unet

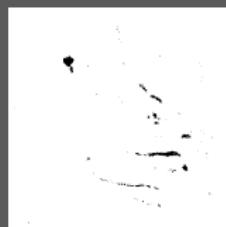
Ex6



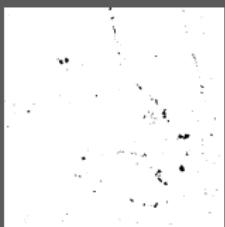
(a) Input



(b) GT



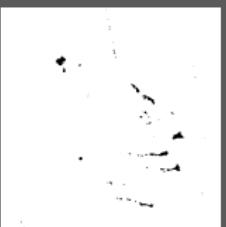
(a) early



(b) late



(c) late late



(d) densenet



(e) unet

Ex7



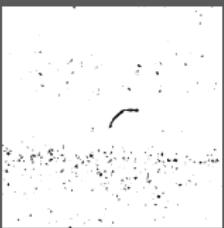
(a) Input



(b) GT



(a) early



(b) late



(c) late late



(d) densenet

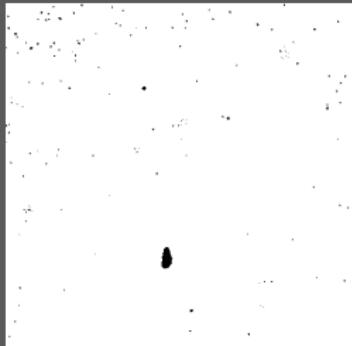


(e) unet

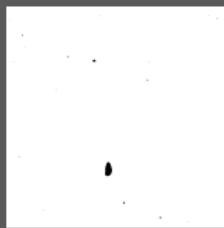
Ex8



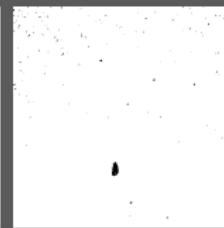
(a) Input



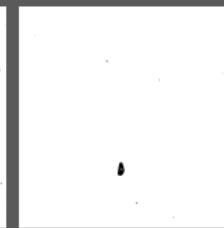
(b) GT



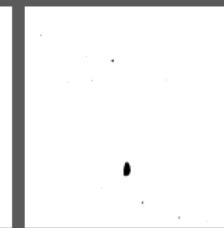
(a) early



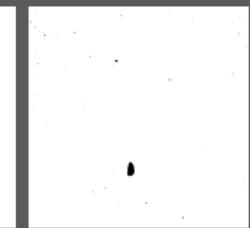
(b) late



(c) late late



(d) densenet

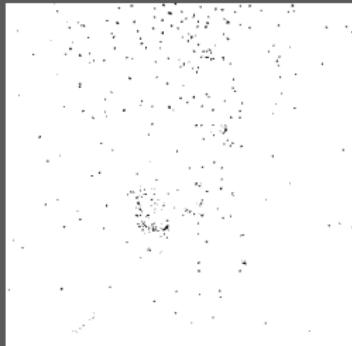


(e) unet

Ex9



(a) Input



(b) GT



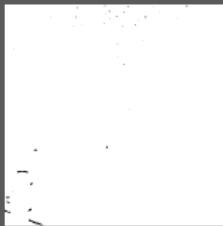
(a) early



(b) late



(c) late late

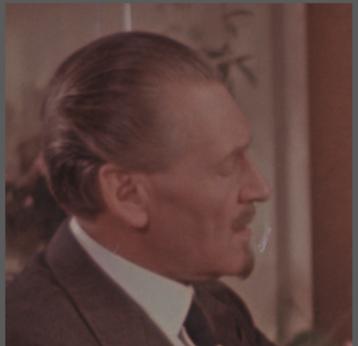


(d) densenet



(e) unet

Ex10



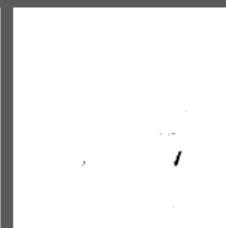
(a) Input



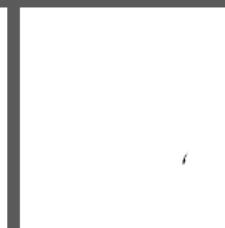
(b) GT



(a) early



(b) late



(c) late late



(d) densenet

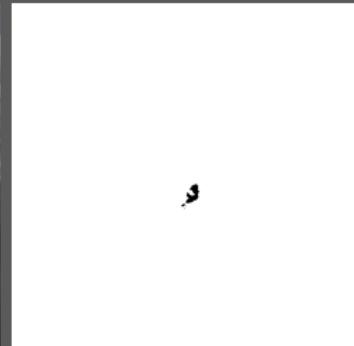


(e) unet

Ex11



(a) Input



(b) GT



(a) early



(b) late



(c) late late



(d) densenet

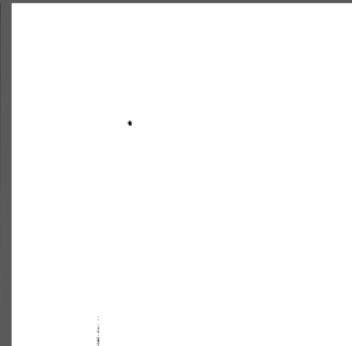


(e) unet

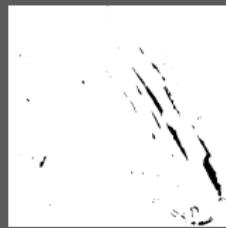
Ex12



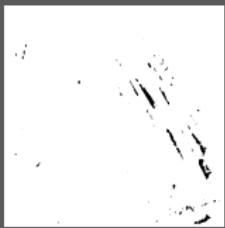
(a) Input



(b) GT



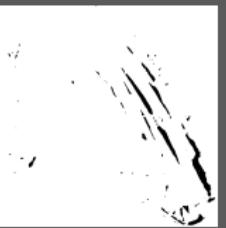
(a) early



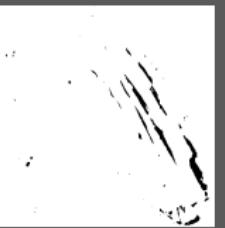
(b) late



(c) late late



(d) densenet

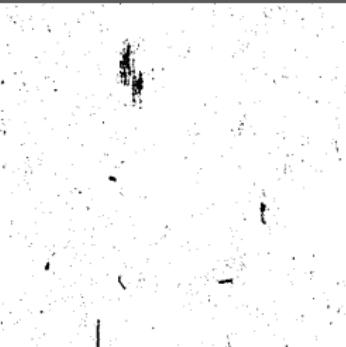


(e) unet

Ex13



(a) Input



(b) GT



(a) early



(b) late



(c) late late

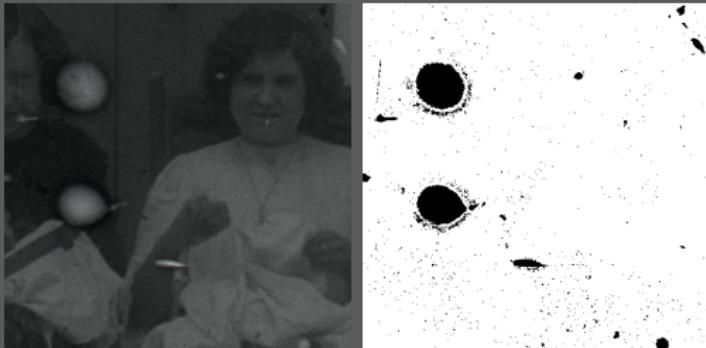


(d) densenet



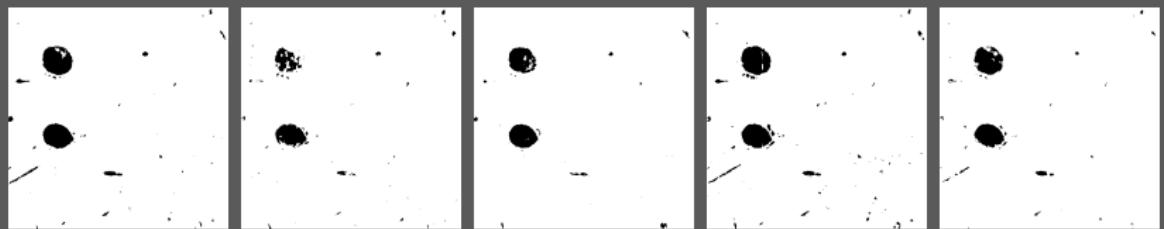
(e) unet

Ex14



(a) Input

(b) GT



(a) early

(b) late

(c) late late

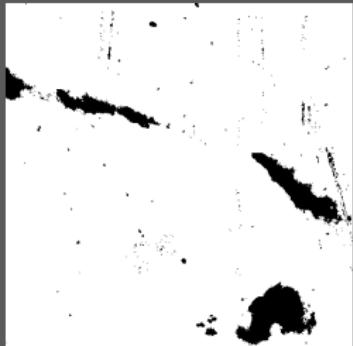
(d) densenet

(e) unet

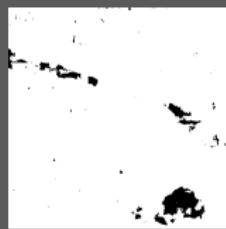
Ex15



(a) Input



(b) GT



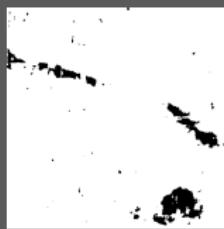
(a) early



(b) late



(c) late late

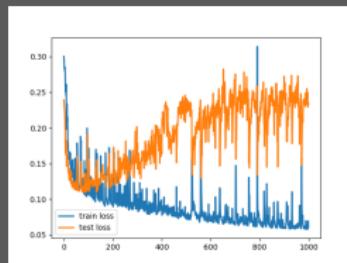


(d) densenet

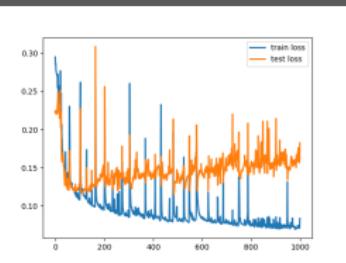


(e) unet

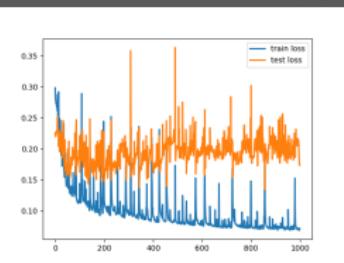
Trainingsloss



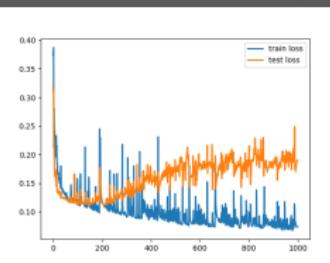
(a) early



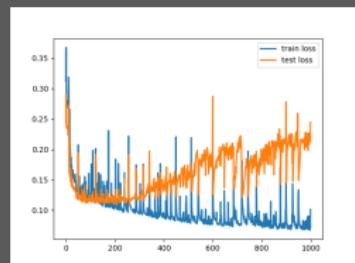
(b) late



(c) late late

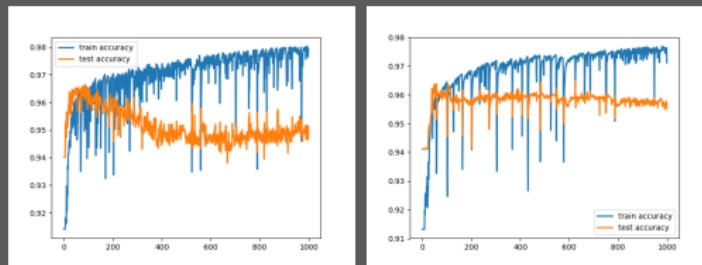


(d) densenet



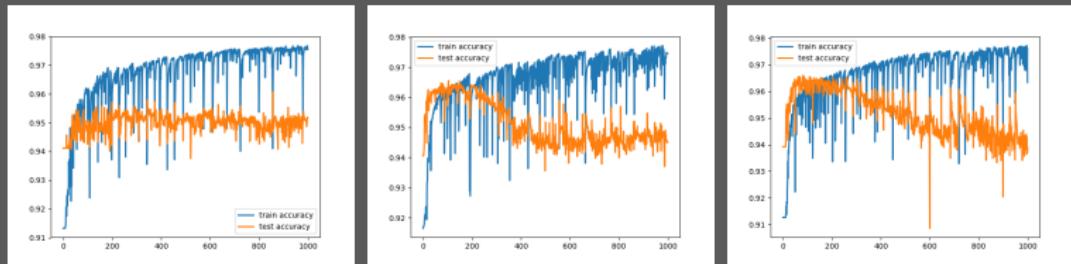
(e) unet

Accuracy



(a) early

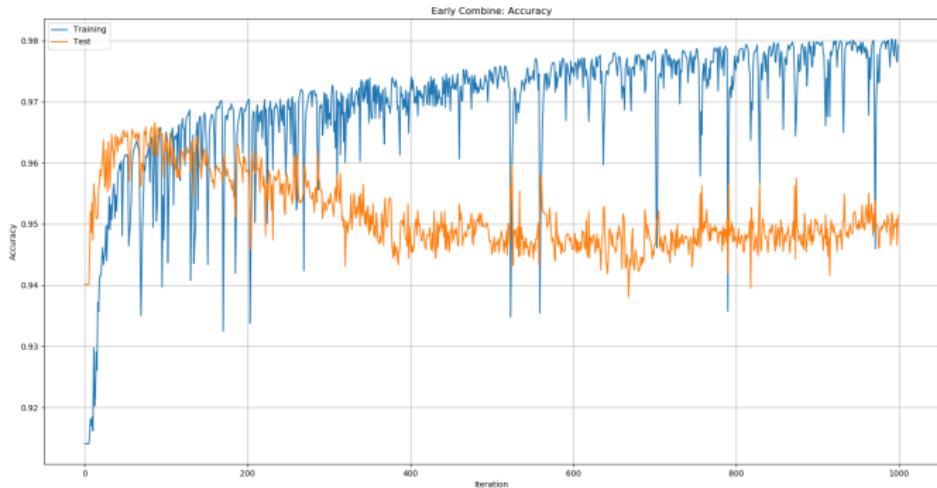
(b) late

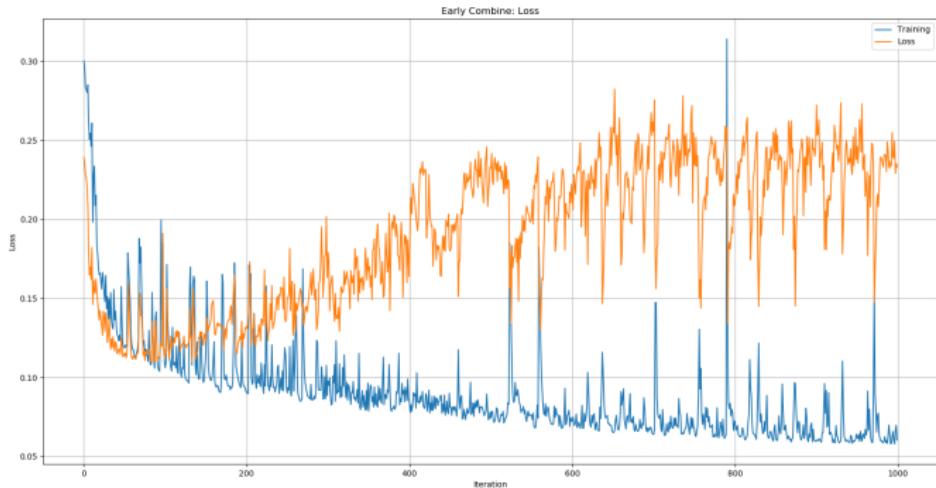


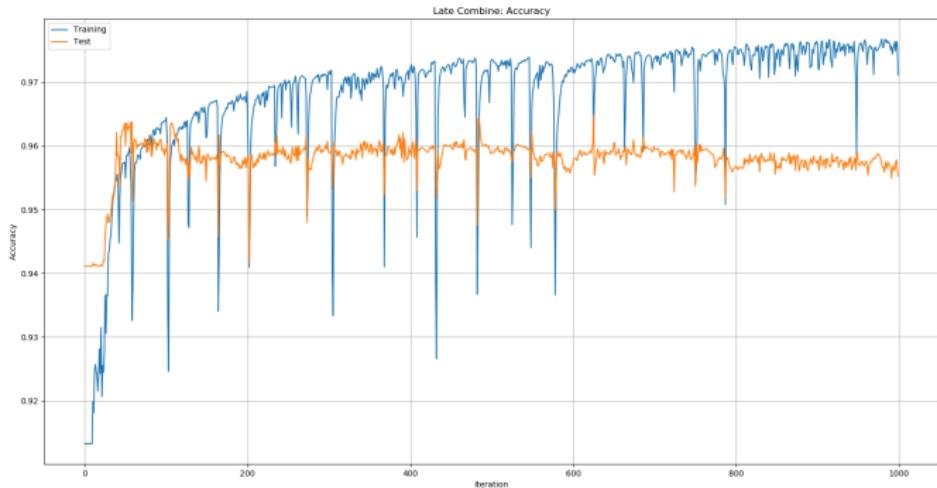
(c) late late

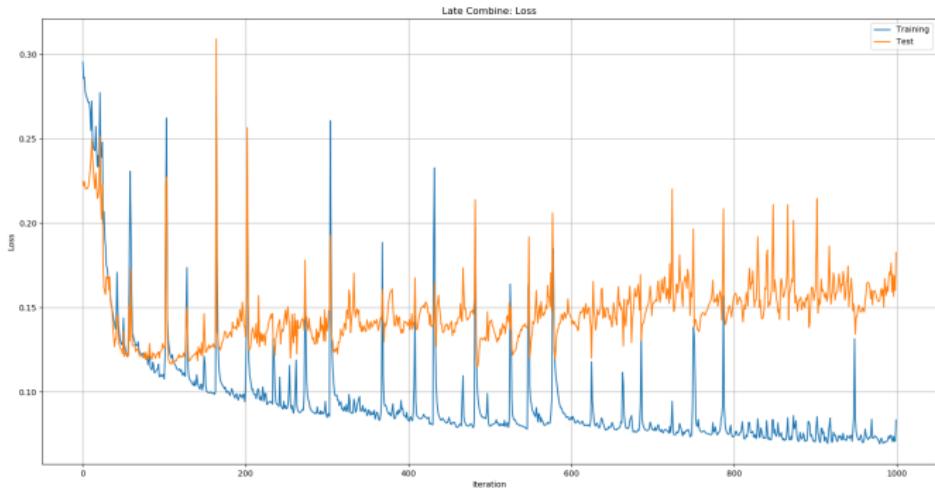
(d) densenet

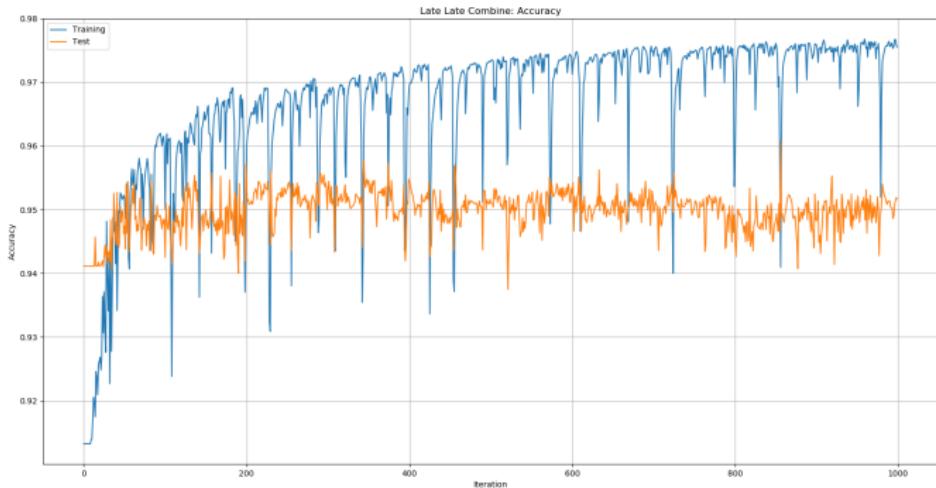
(e) unet

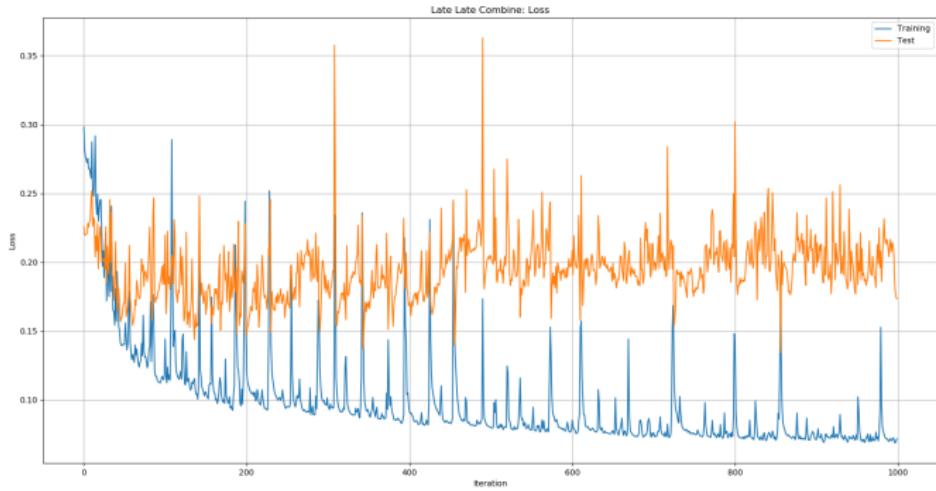


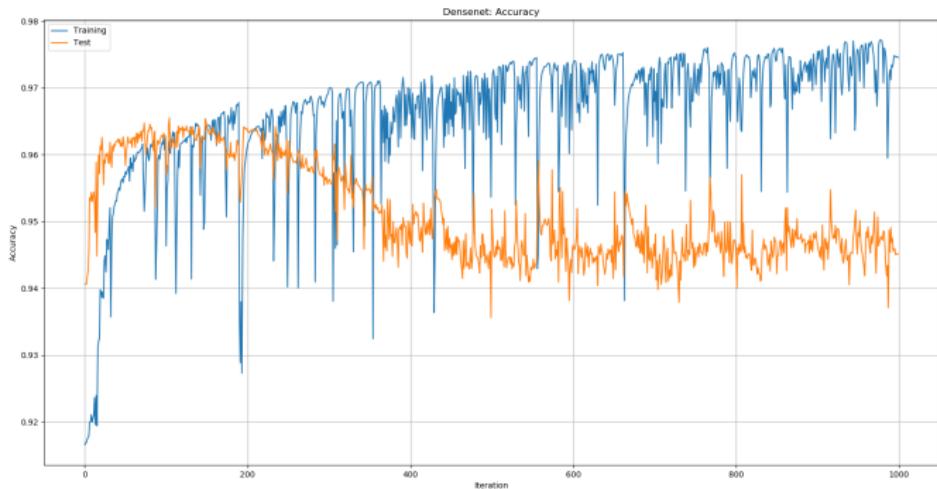


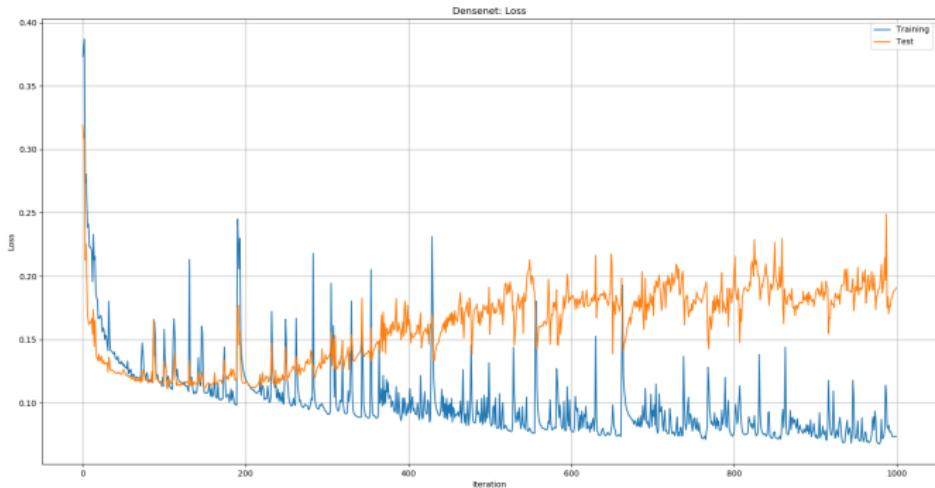


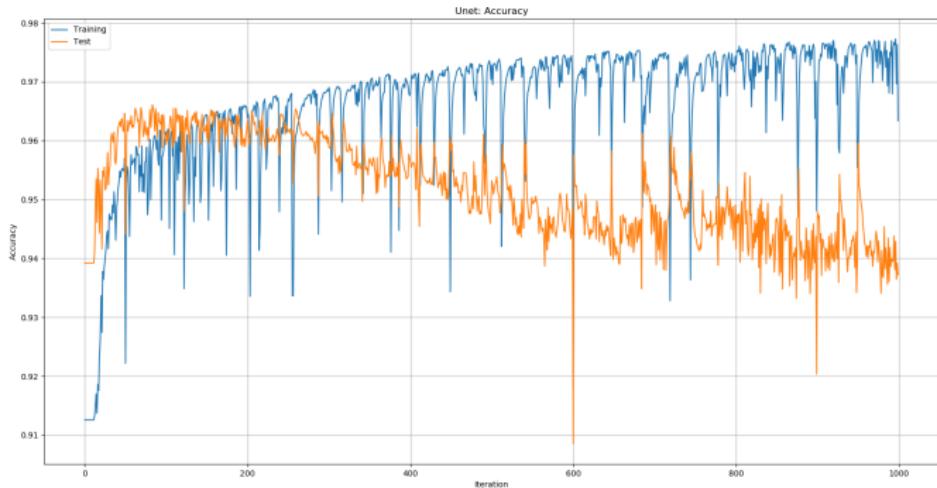


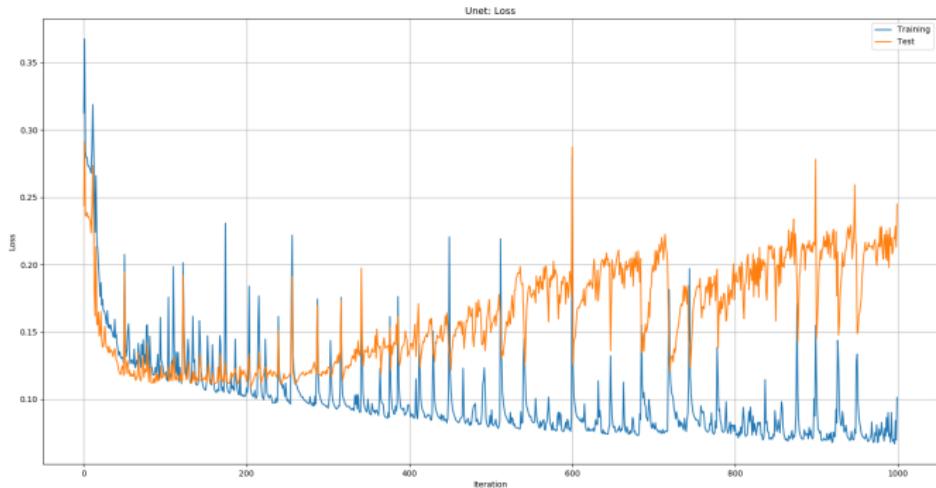


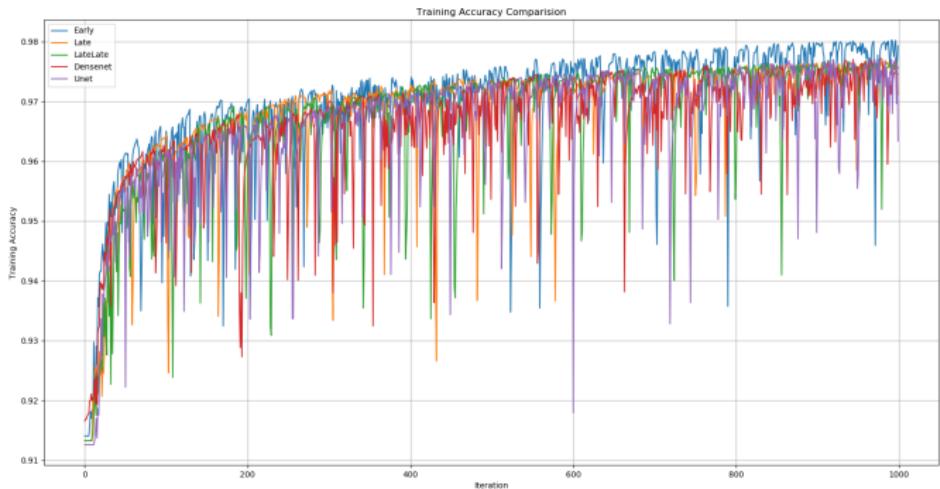


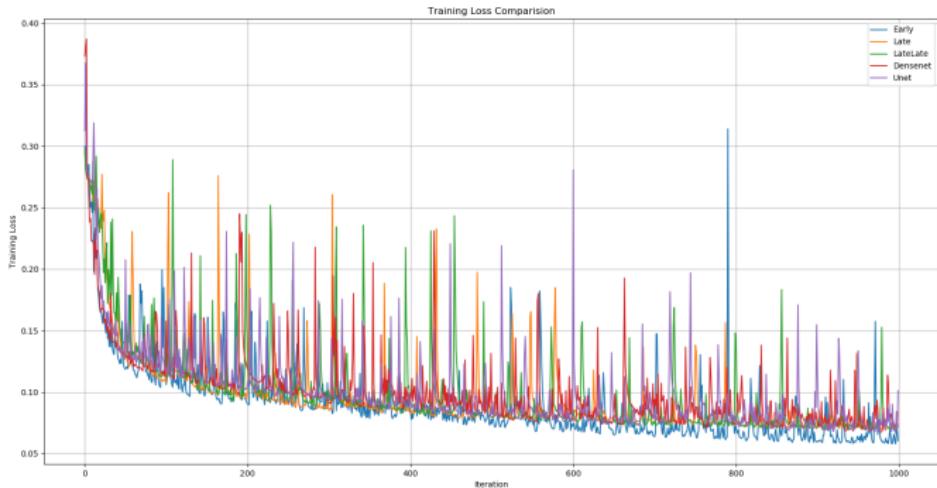


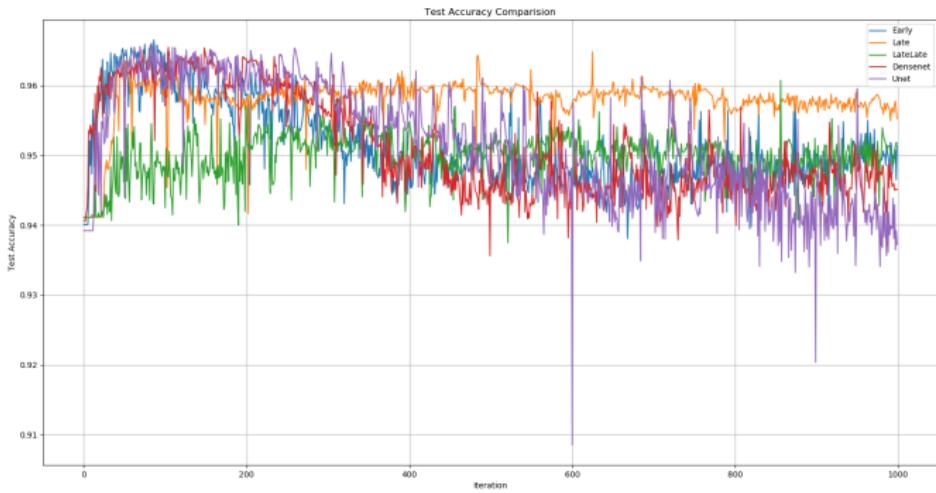


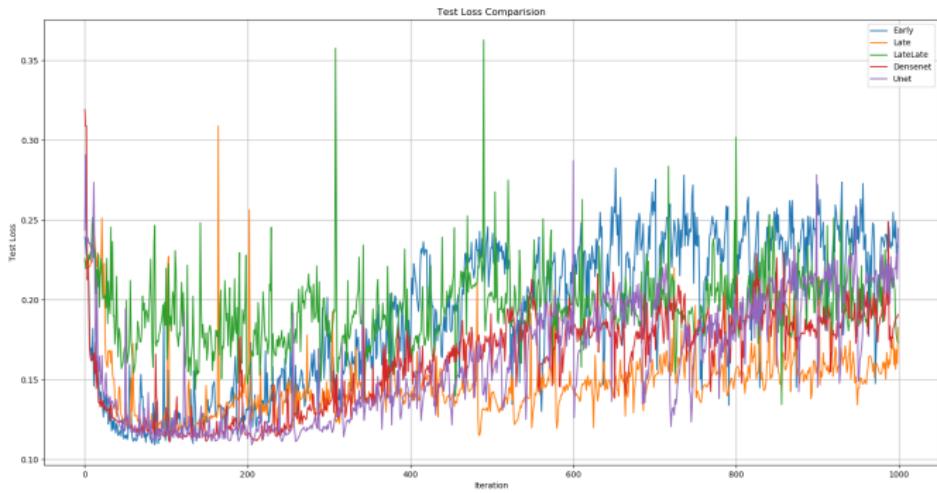


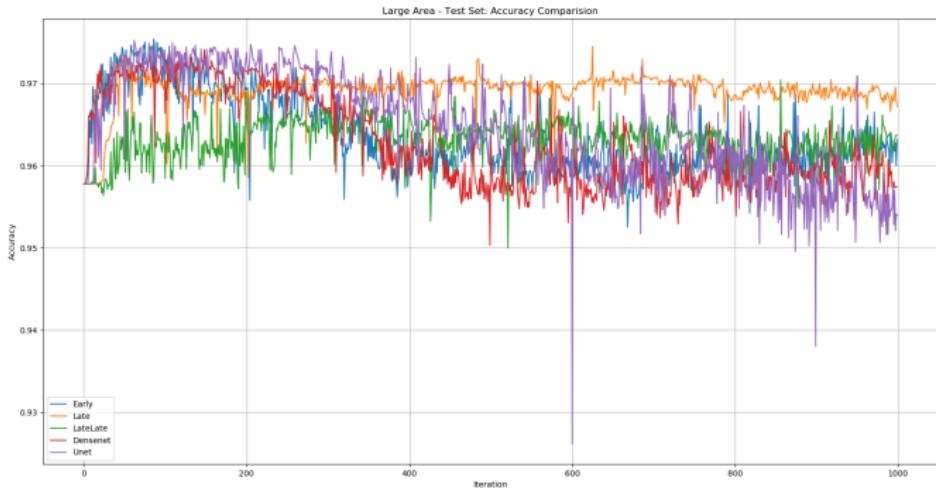


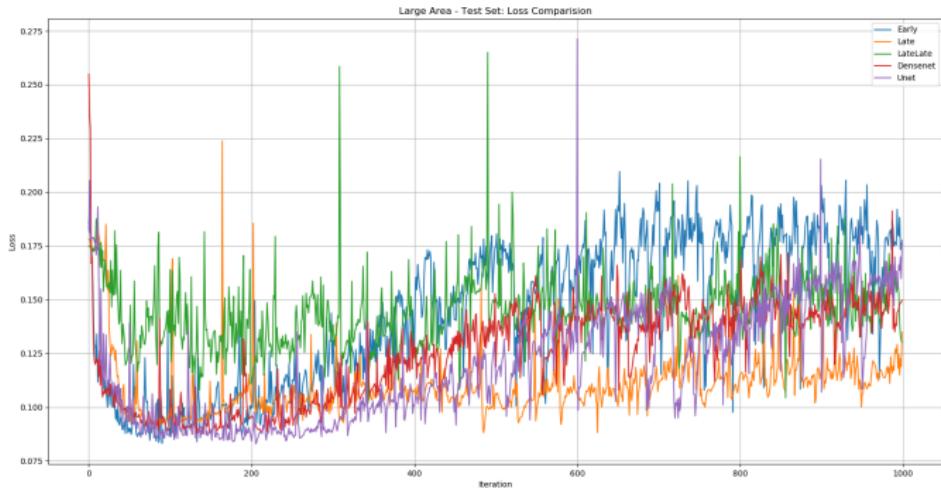


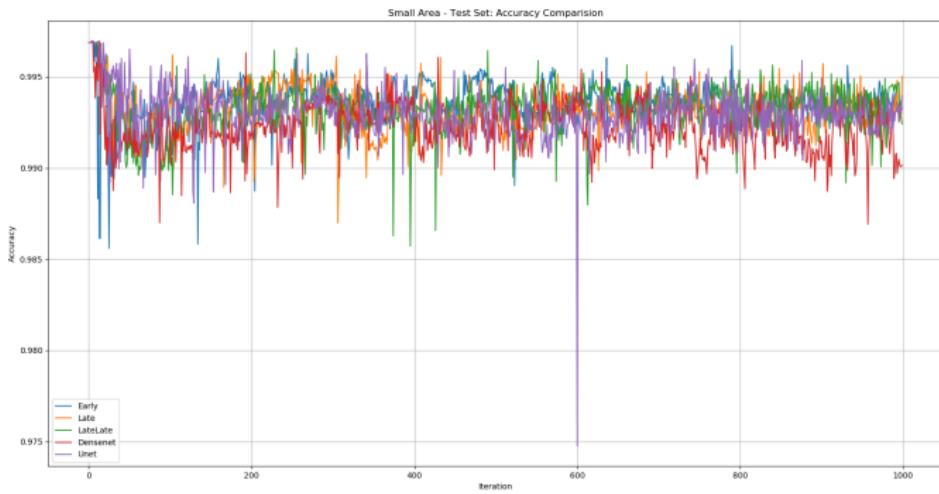


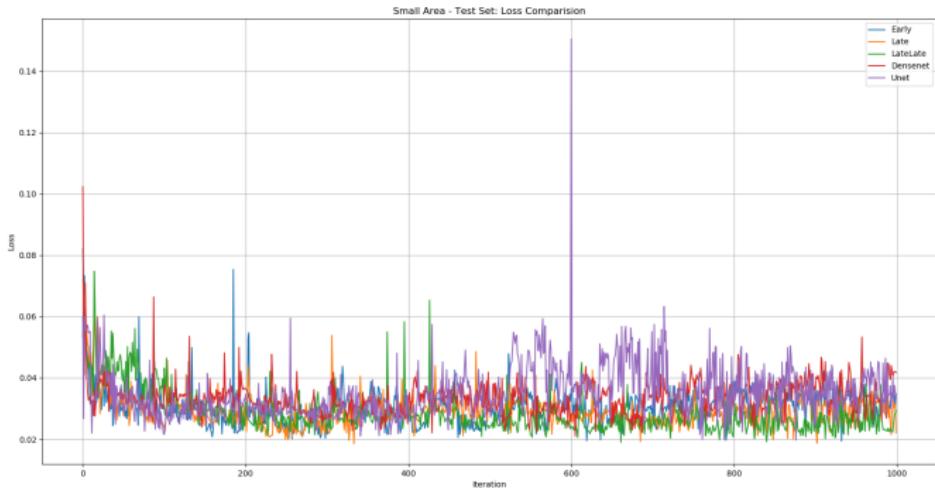


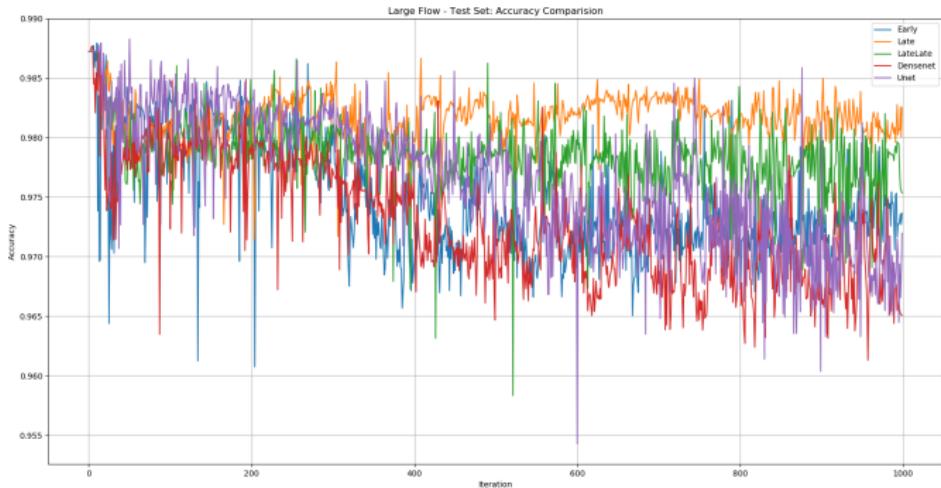


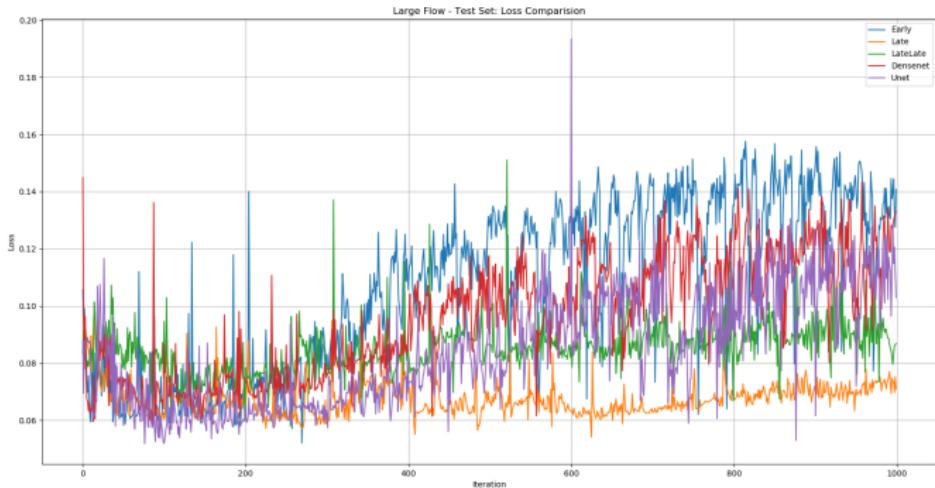


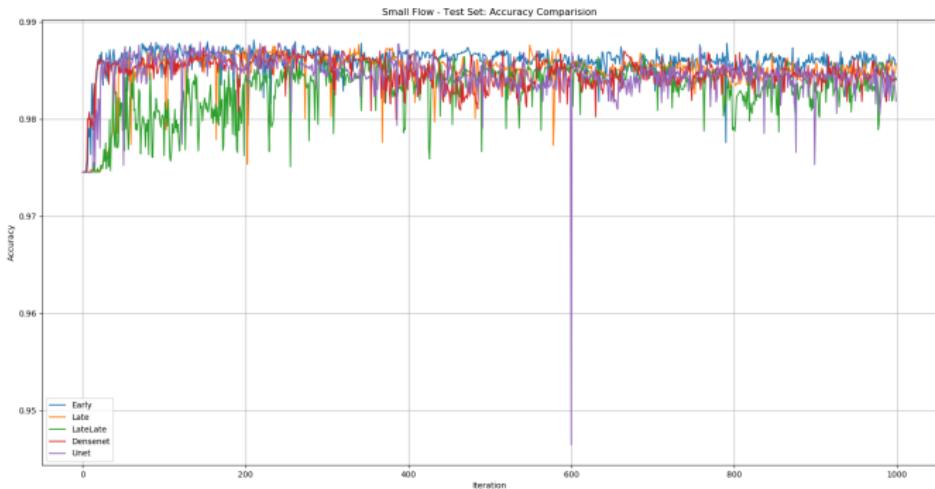


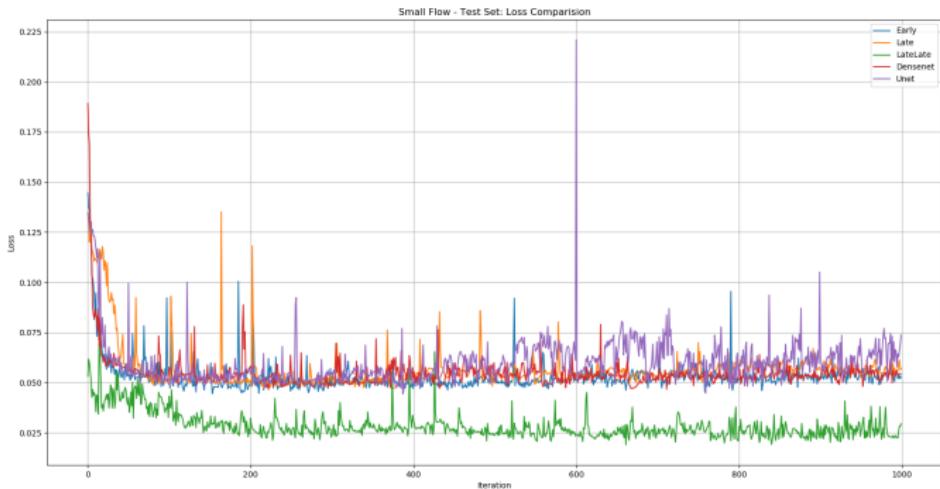






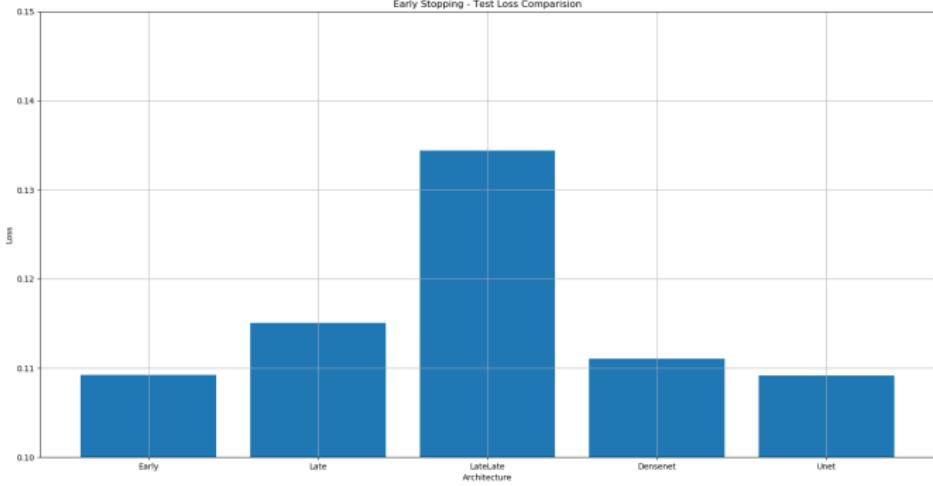


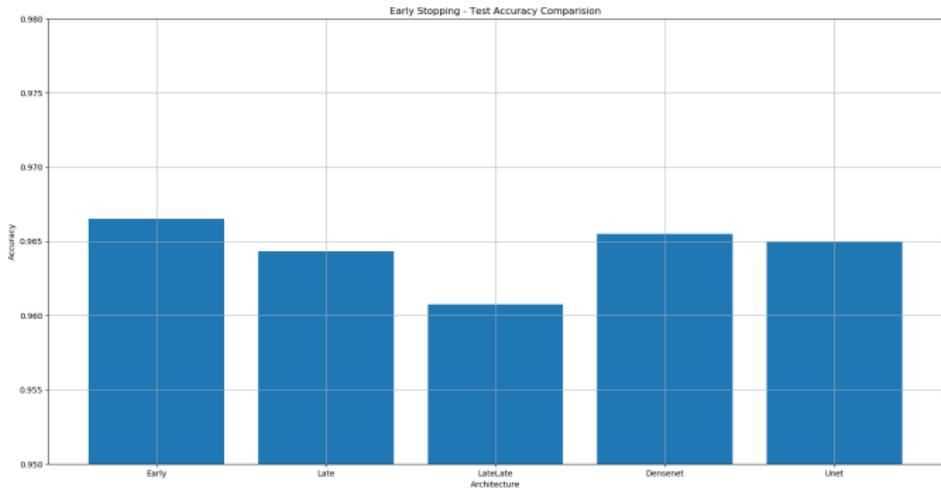




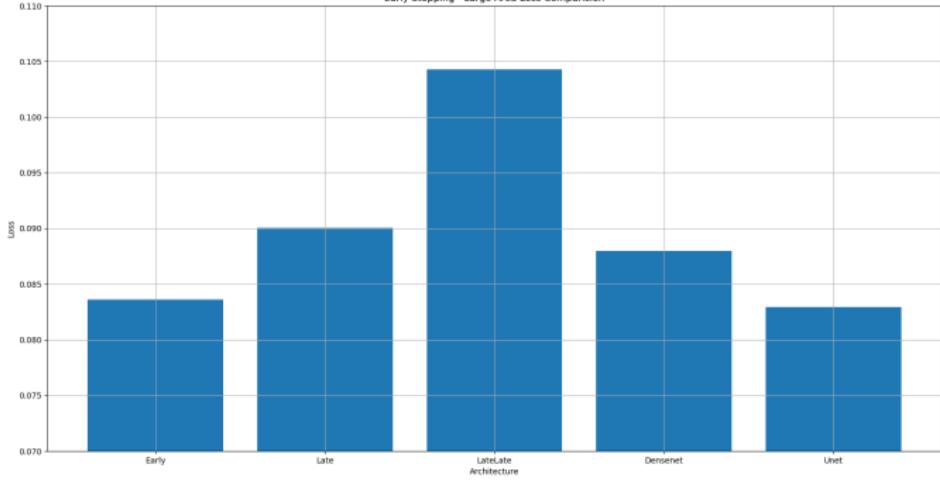
Early Stopping results

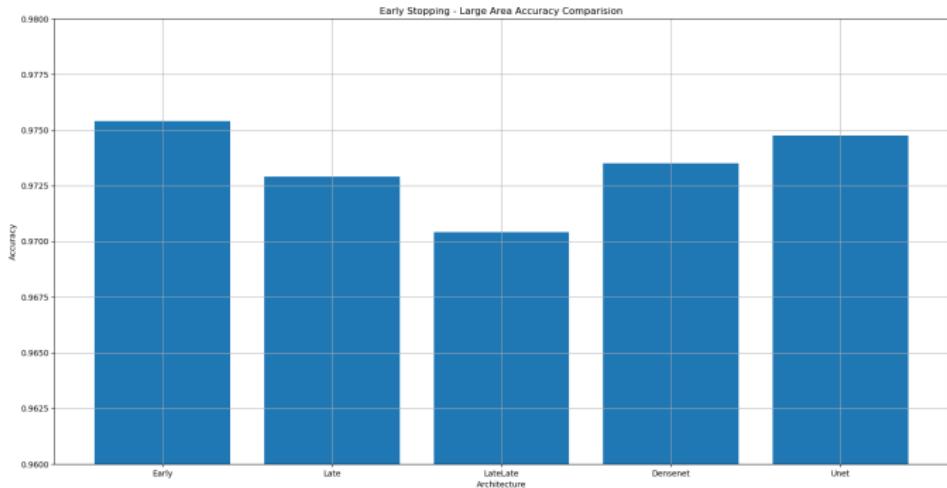
Early Stopping - Test Loss Comparison



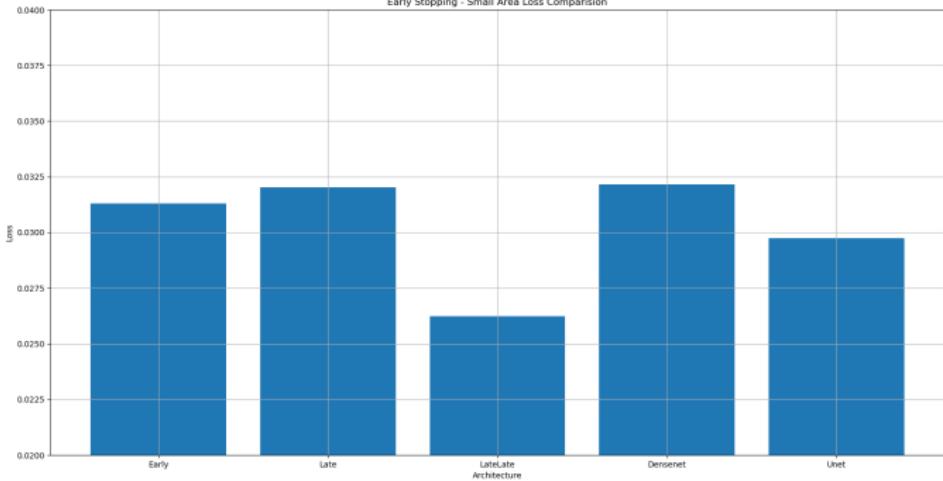


Early Stopping - Large Area Loss Comparison

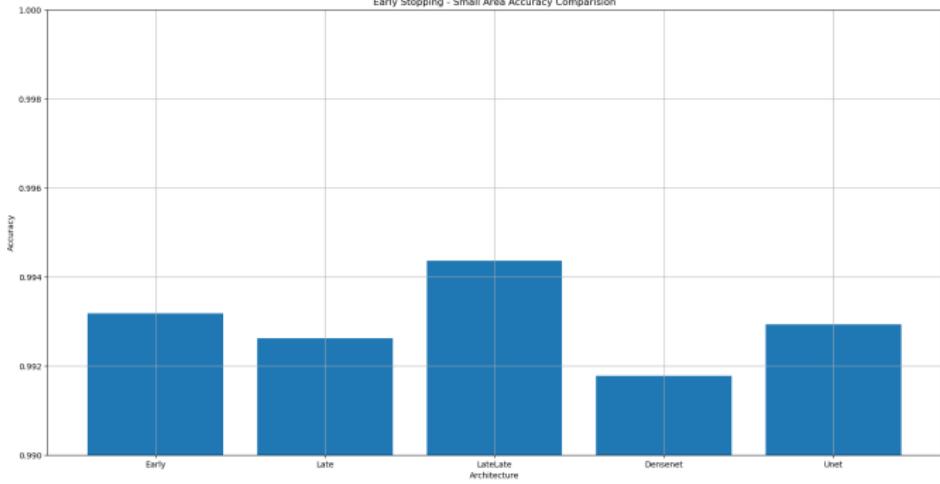




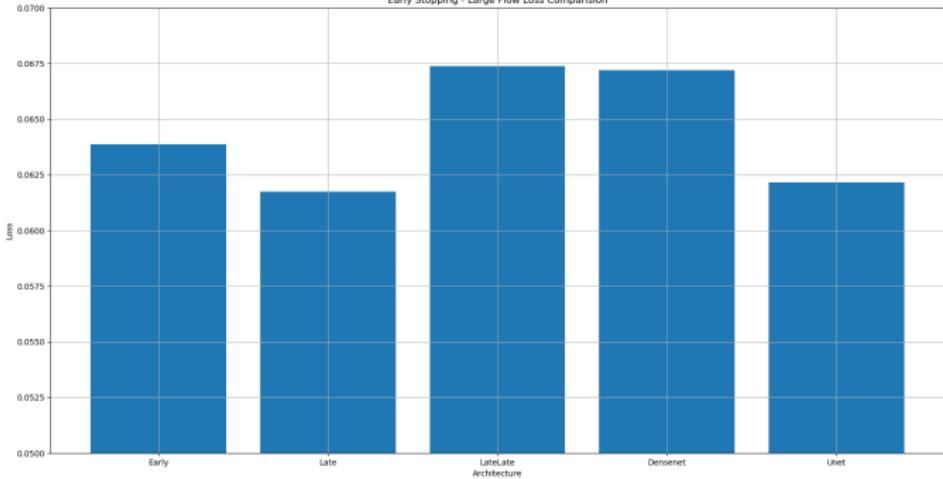
Early Stopping - Small Area Loss Comparison



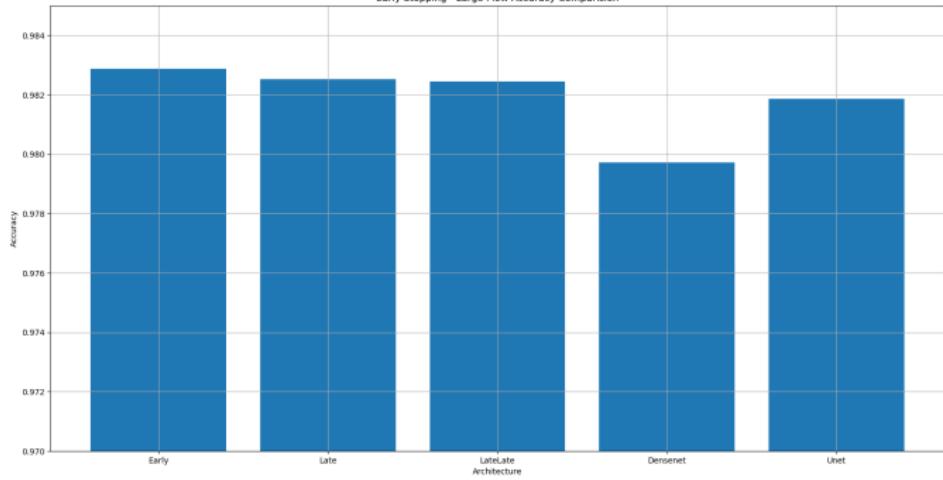
Early Stopping - Small Area Accuracy Comparision



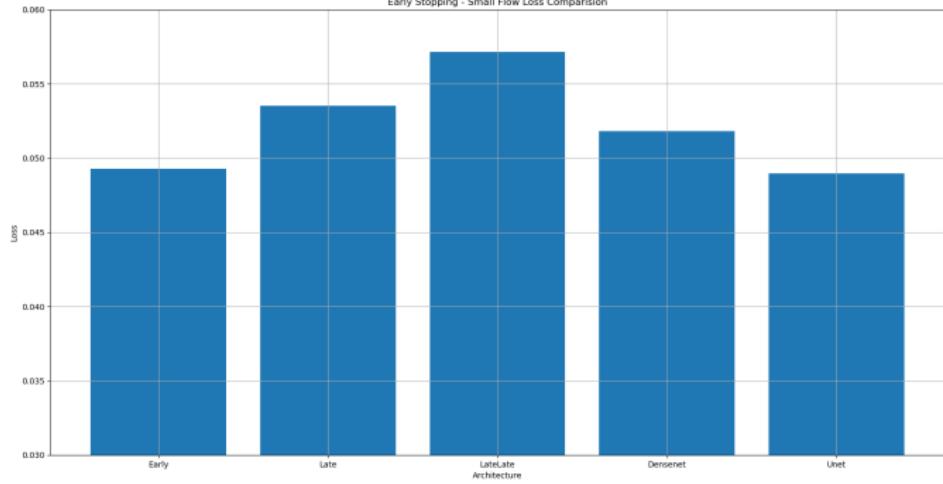
Early Stopping - Large Flow Loss Comparison



Early Stopping - Large Flow Accuracy Comparison



Early Stopping - Small Flow Loss Comparison



Early Stopping - Small Flow Accuracy Comparison

