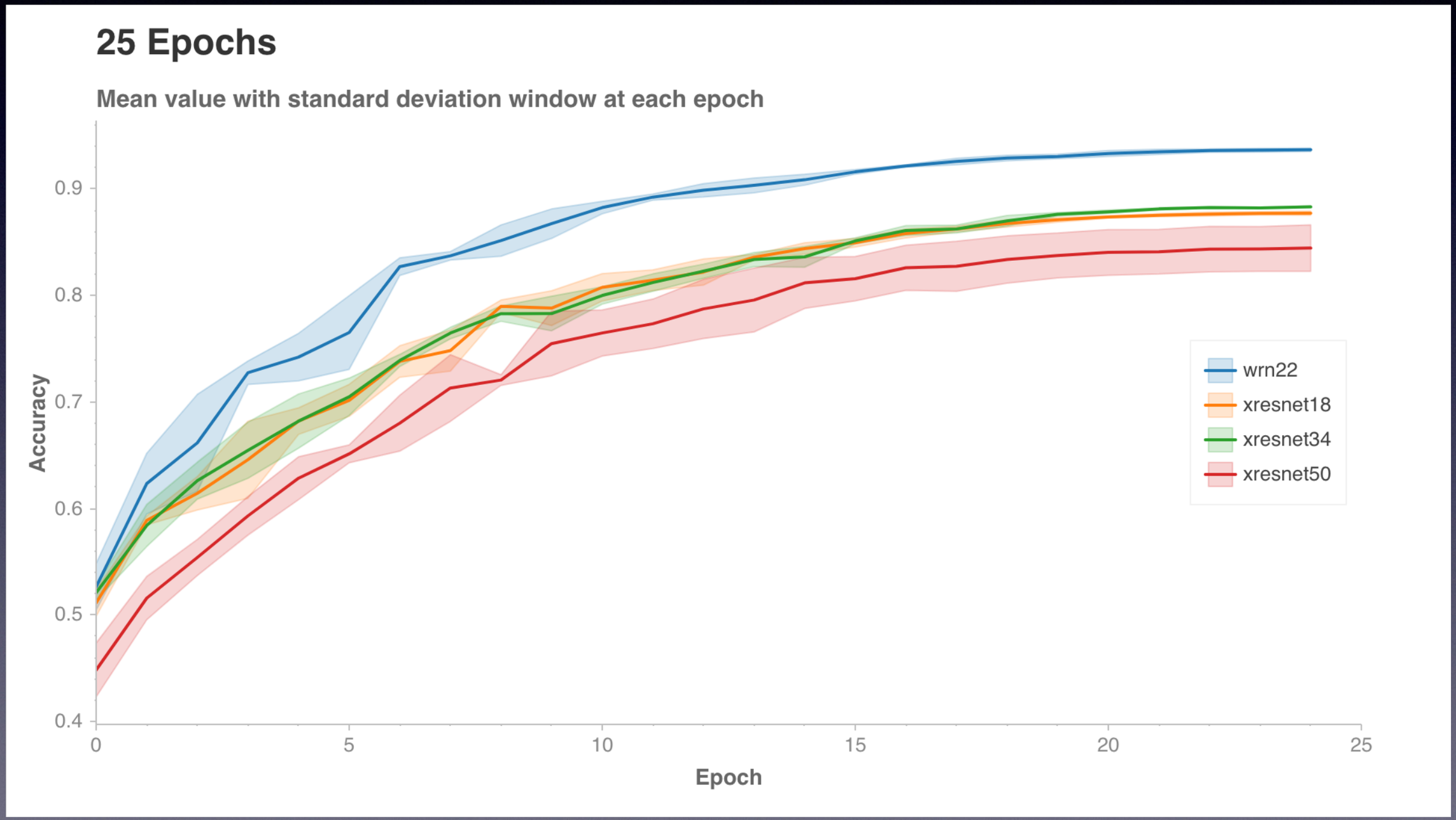
Graphs of Means and Standard Deviations Across 5 Runs

Gobind Puniani
MATH 190: Fall 2019
10/18/19

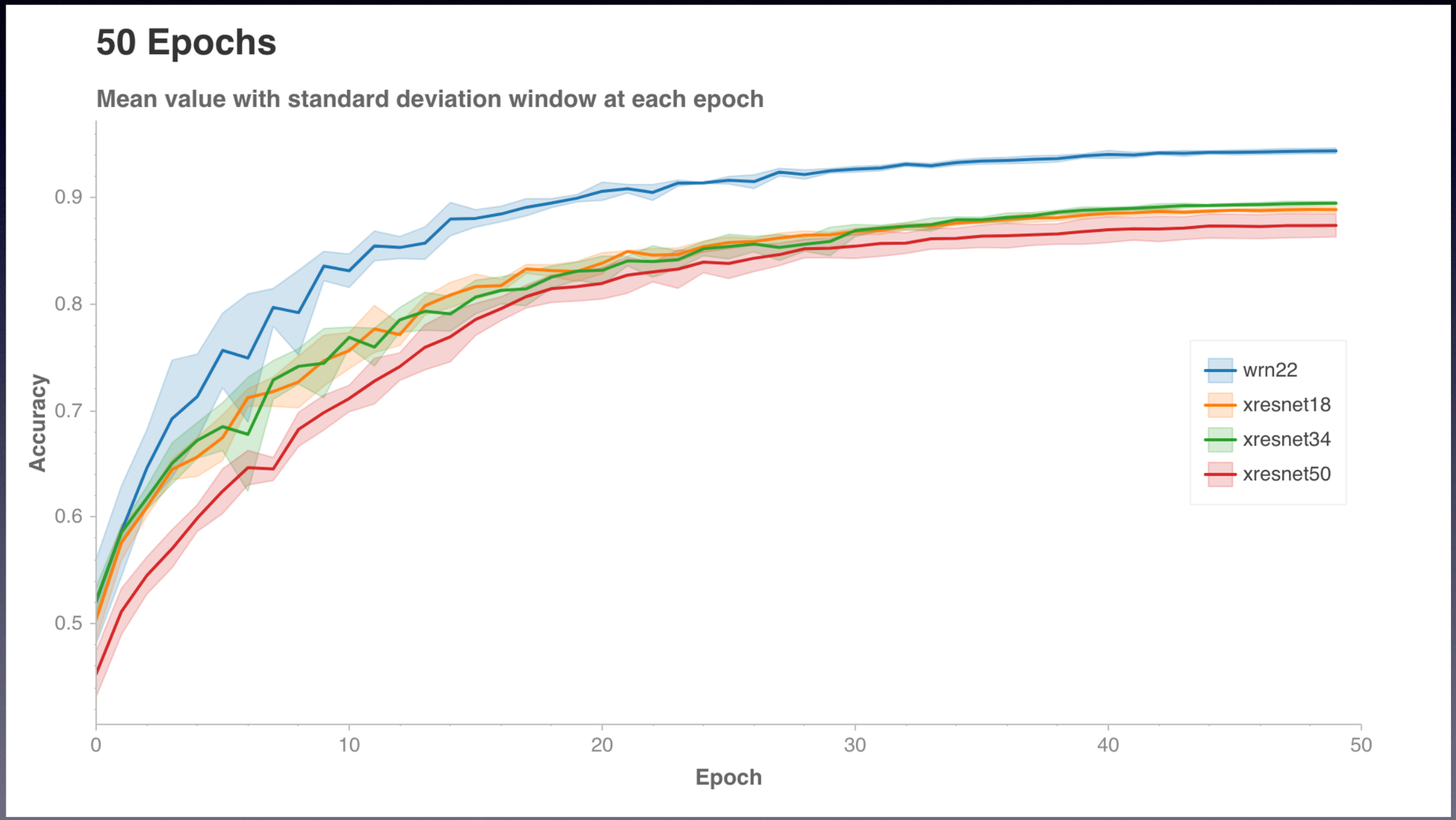
Procedure

- Patrick Manghera helped write the Python script for taking the mean and standard deviations
- 3 plots (25, 50, and 100 epochs)
    - 4 models on each plot
- Plots created using chartify library (accuracy vs. epoch)

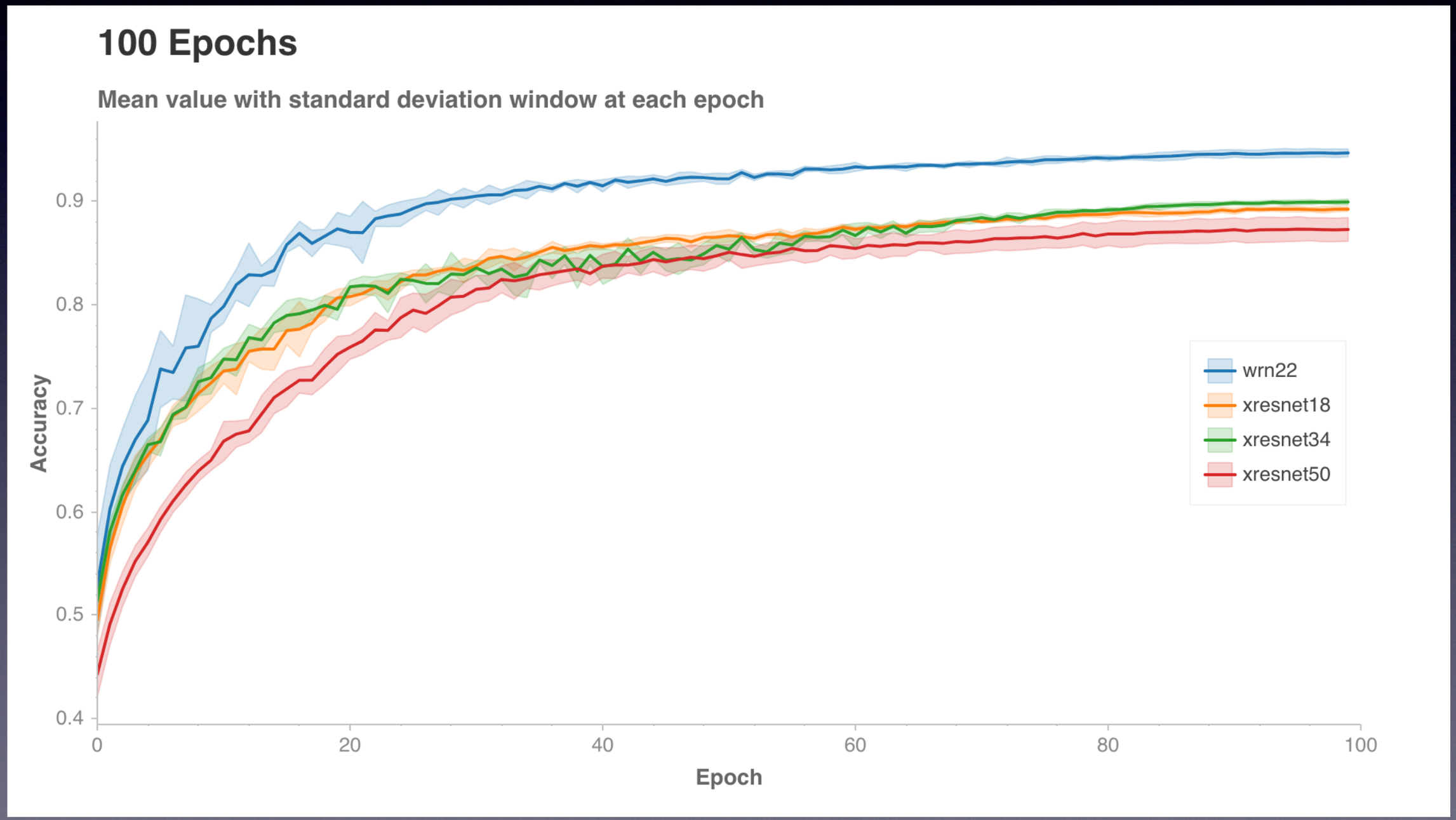
25 Epochs


25 Epochs
Mean value with standard deviation window at each epoch
Accuracy
0.9
0.8
0.7
0.6
0.5
0.4
0
5
10
15
20
25
Epoch
wrn22
xresnet18
xresnet34
xresnet50

50 Epochs


50 Epochs
Mean value with standard deviation window at each epoch
Accuracy
0.9
0.8
0.7
0.6
0.5
0
10
20
30
40
50
Epoch
wrn22
xresnet18
xresnet34
xresnet50

100 Epochs


100 Epochs
Mean value with standard deviation window at each epoch
Accuracy
0.9
0.8
0.7
0.6
0.5
0.4
0
20
40
60
80
100
Epoch
wrn22
xresnet18
xresnet34
xresnet50

Final Median Accuracy

	xresnet18	xresnet34	xresnet50	wrn22
25 Epochs	0.8772	0.883	0.8386	0.9367
50 Epochs	0.8884	0.8952	**0.8765**	0.9437
100 Epochs	**0.8917**	**0.8988**	0.8762	**0.9484**

Learning Rates

- xresnet18
  - 25 Epochs: $3.02 \cdot 10^{-3}$
  - 50 Epochs: $3.02 \cdot 10^{-3}$
  - 100 Epochs: $4.37 \cdot 10^{-3}$
- xresnet34
  - 25 Epochs: $4.37 \cdot 10^{-3}$
  - 50 Epochs: $3.63 \cdot 10^{-3}$
  - 100 Epochs: $2.51 \cdot 10^{-3}$
- xresnet50
  - 25 Epochs: $8.32 \cdot 10^{-4}$
  - 50 Epochs: $6.92 \cdot 10^{-4}$
  - 100 Epochs: $1.20 \cdot 10^{-3}$
- wrn22
  - 25 Epochs: $2.51 \cdot 10^{-3}$
  - 50 Epochs: $2.51 \cdot 10^{-3}$
  - 100 Epochs: $3.02 \cdot 10^{-3}$