

Supplementary Material for:
**Computational Evaluation of the Combination of Semi-Supervised and Active
Learning for Histopathology Image Segmentation with Missing Annotations**

Laura Gálvez Jiménez
Université Libre de Bruxelles
Brussels, Belgium

laura.galvez.jimenez@ulb.be

Lucile Dierckx
Université Catholique de Louvain
Louvain-la-Neuve

lucile.dierckx@uclouvain.be

Maxime Amodei
Université de Liège
Liège, Belgium

maxime.amodei@uliege.be

Hamed Razavi Khosroshahi
Université Libre de Bruxelles
Brussels, Belgium

hamed.razavi.khosroshahi@ulb.be

Natarajan Chidambaran
Université de Mons
Mons, Belgium

natarajan.chidambaram@umons.ac.be

Anh-Thu Phan Ho
Multitel
Mons, Belgium

phanho@multitel.be

Alberto Franzin
Université Libre de Bruxelles
Brussels, Belgium

alberto.franzin@ulb.be

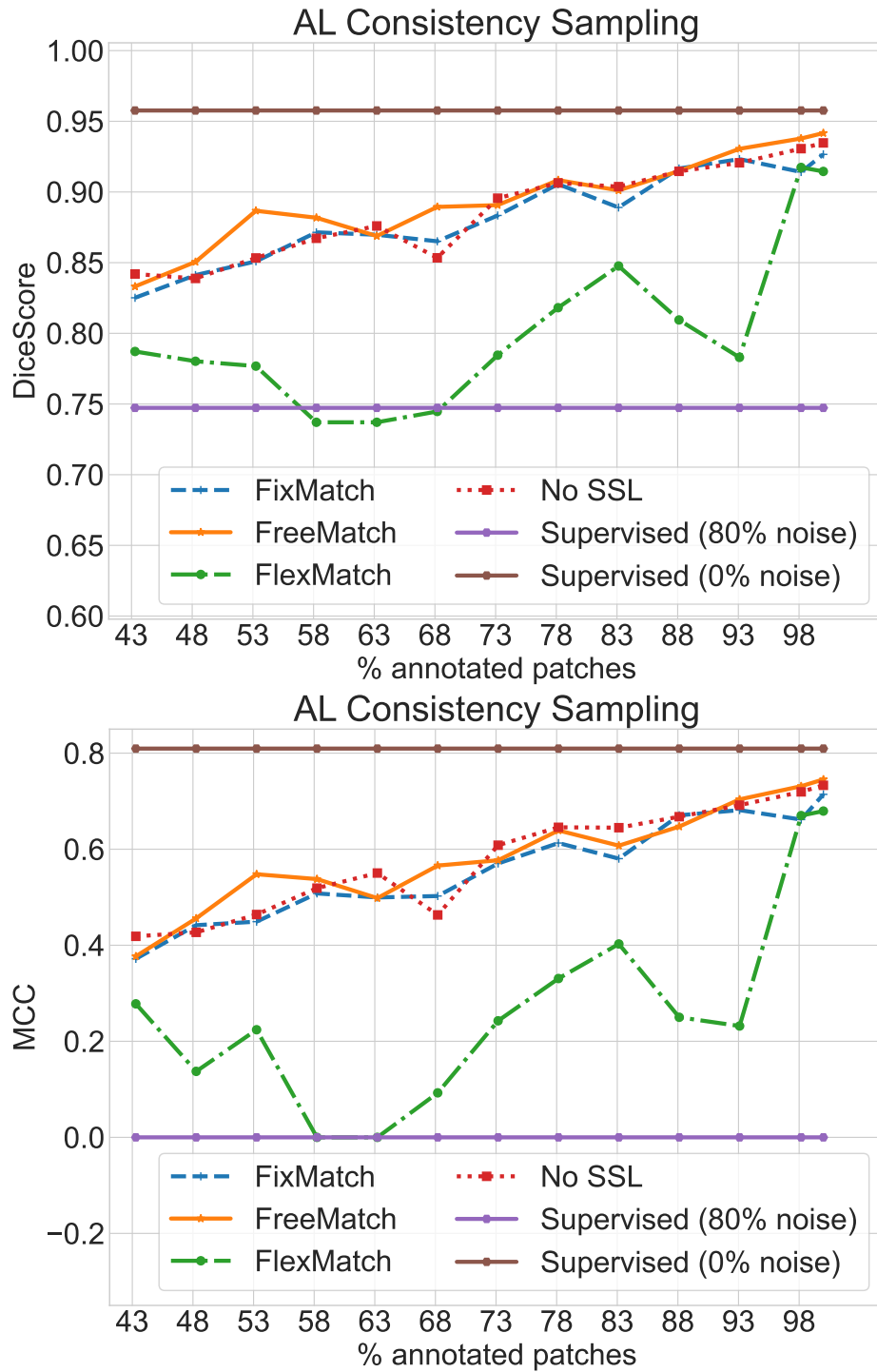


Figure 1: Dice Score (top) and Matthews Correlation Coefficient (bottom) for the AL Consistency sampling selection strategy.

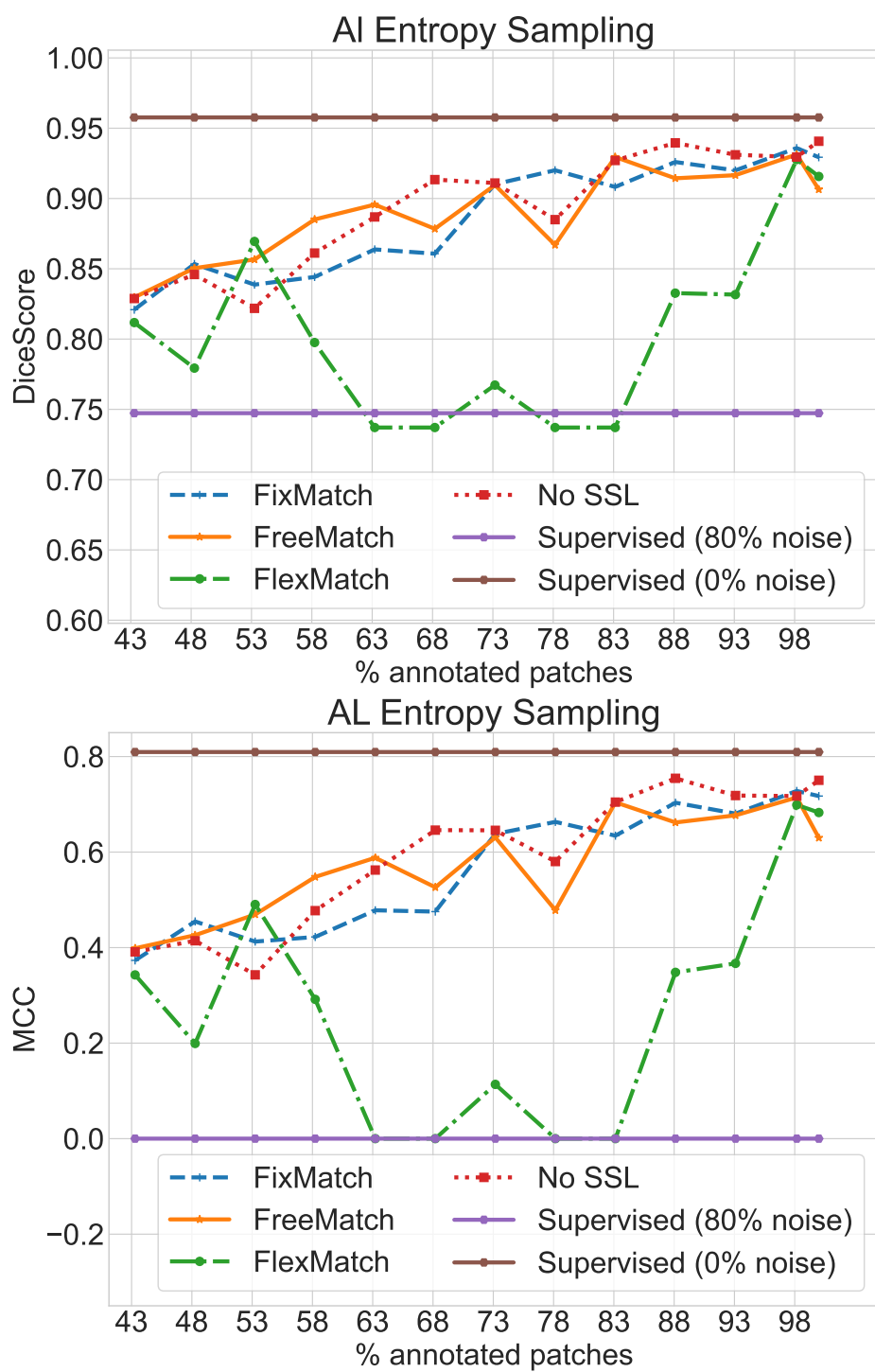


Figure 2: Dice Score (top) and Matthews Correlation Coefficient (bottom) for the AL Entropy sampling selection strategy.

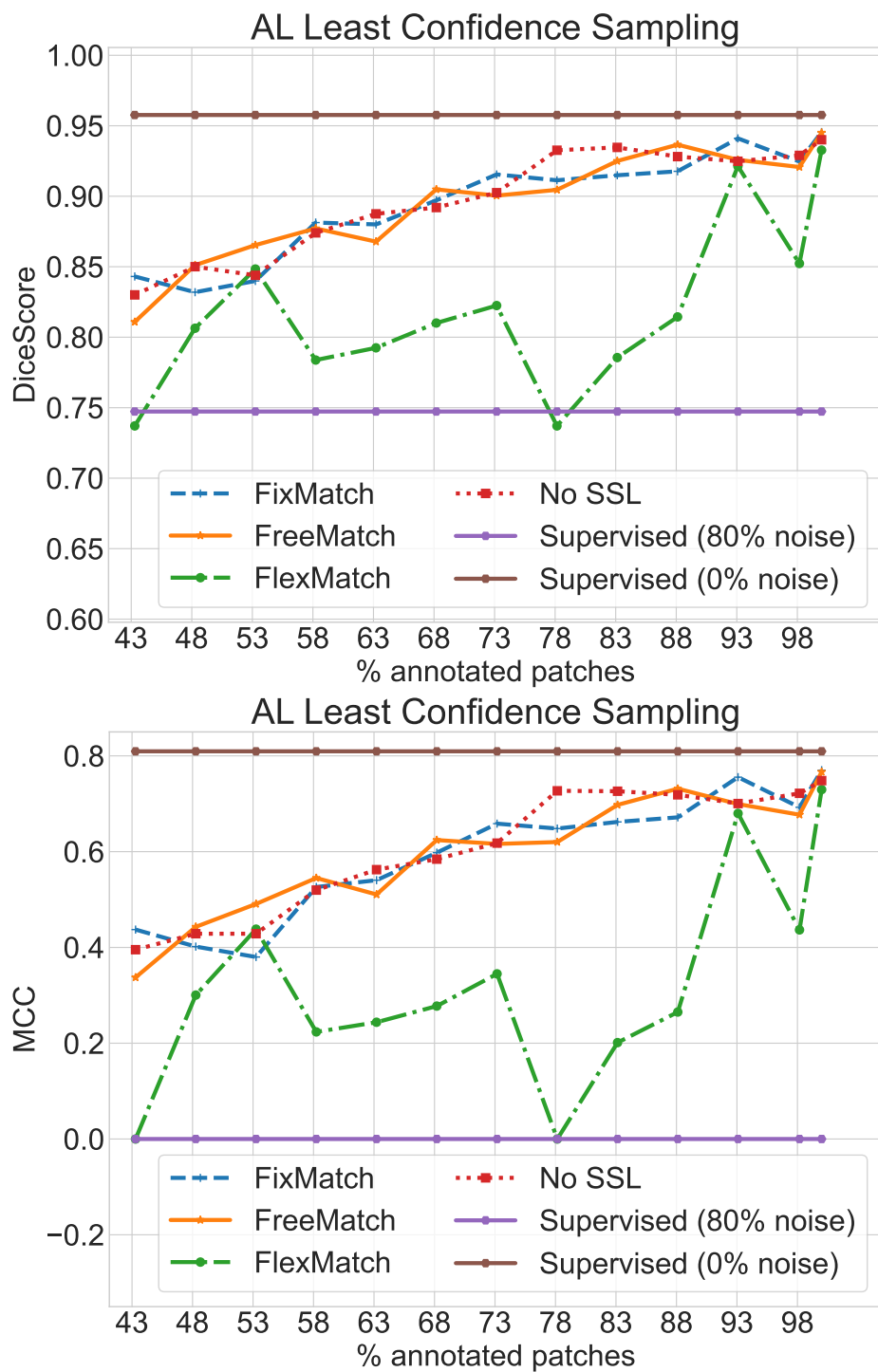


Figure 3: Dice Score (top) and Matthews Correlation Coefficient (bottom) for the AL Least confidence sampling selection strategy.

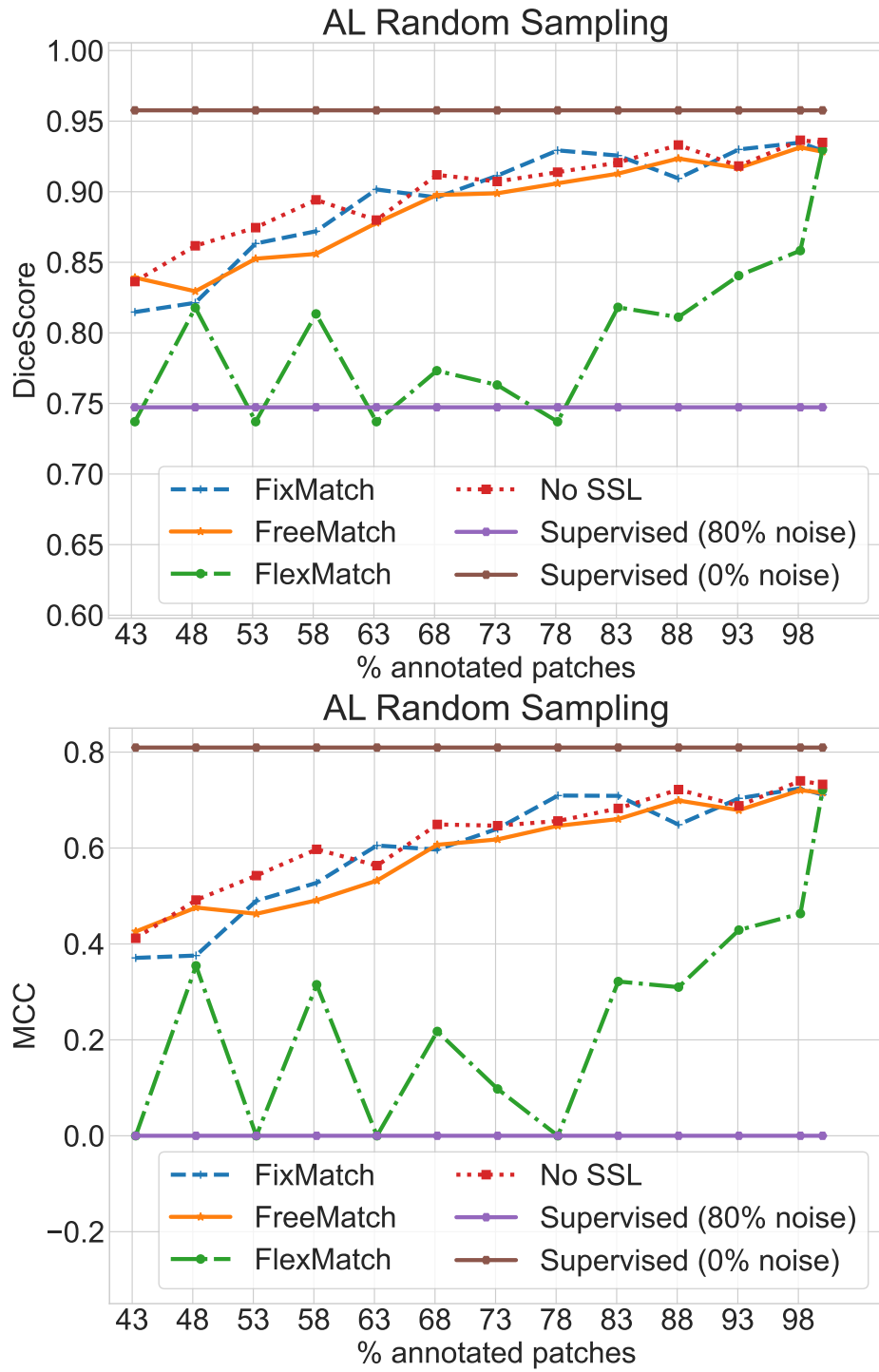


Figure 4: Dice Score (top) and Matthews Correlation Coefficient (bottom) for the AL Random sampling selection strategy.

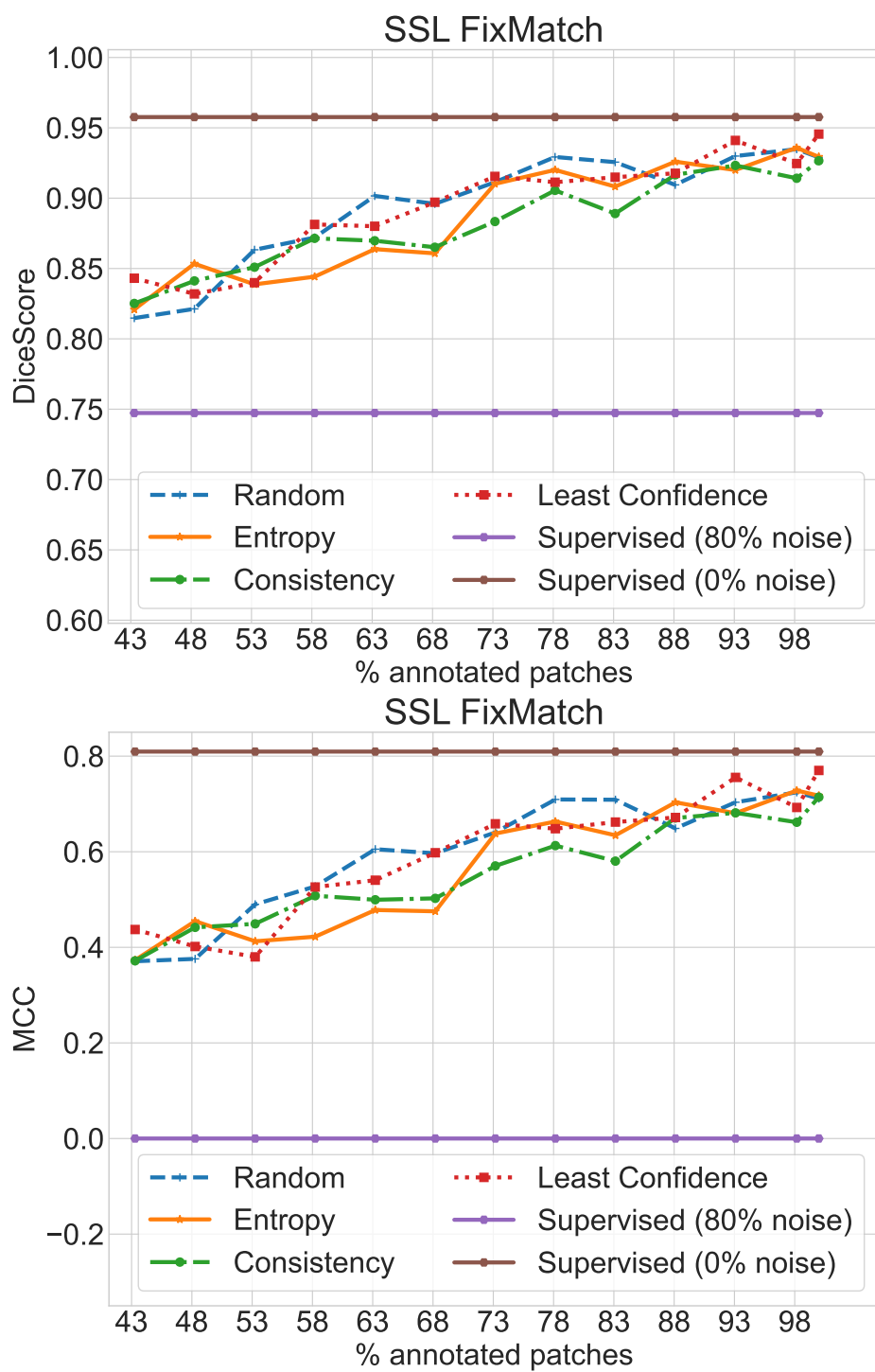


Figure 5: Dice Score (top) and Matthews Correlation Coefficient (bottom) for the FixMatch SSL strategy.

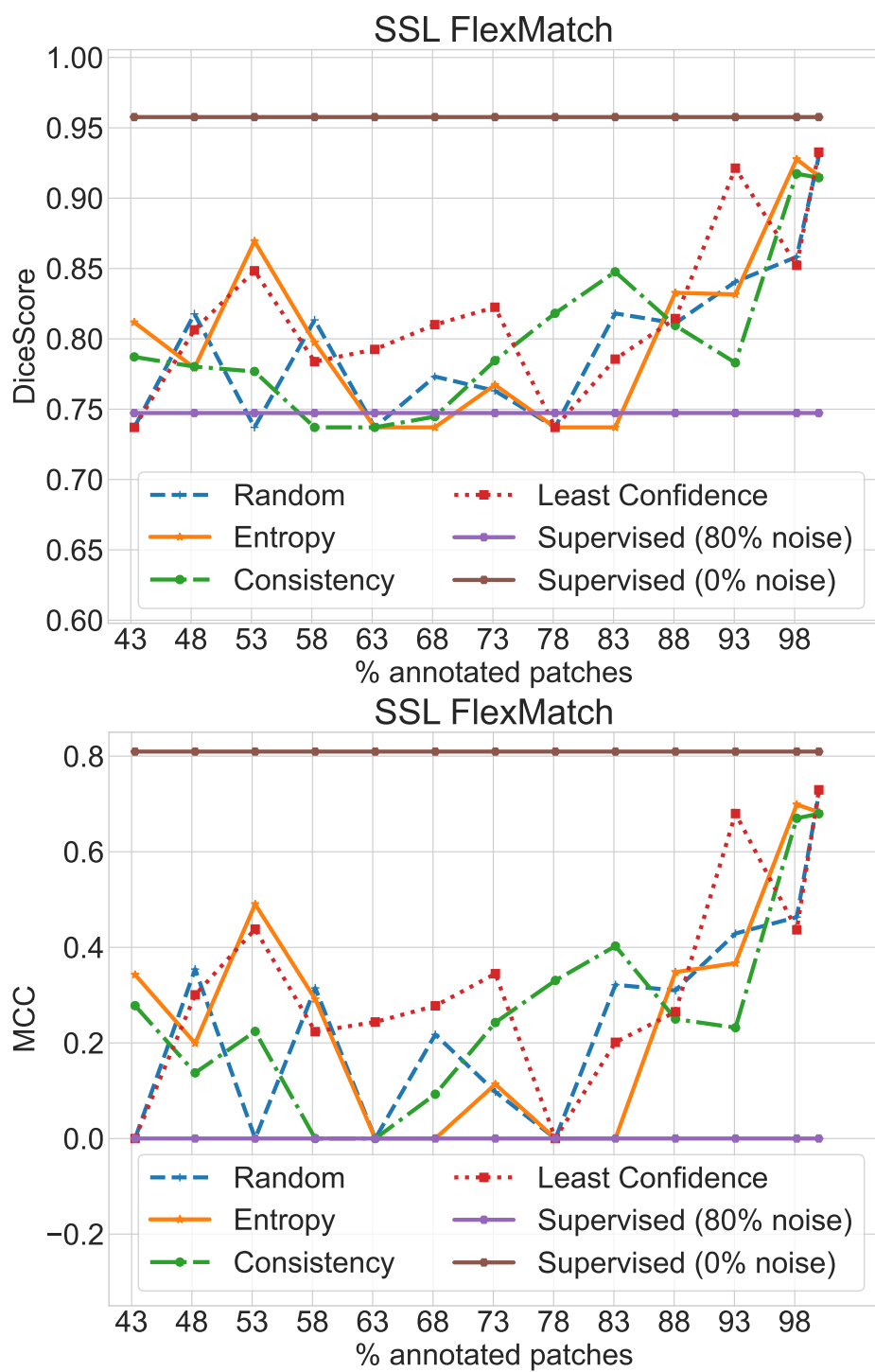


Figure 6: Dice Score (top) and Matthews Correlation Coefficient (bottom) for the FlexMatch strategy.

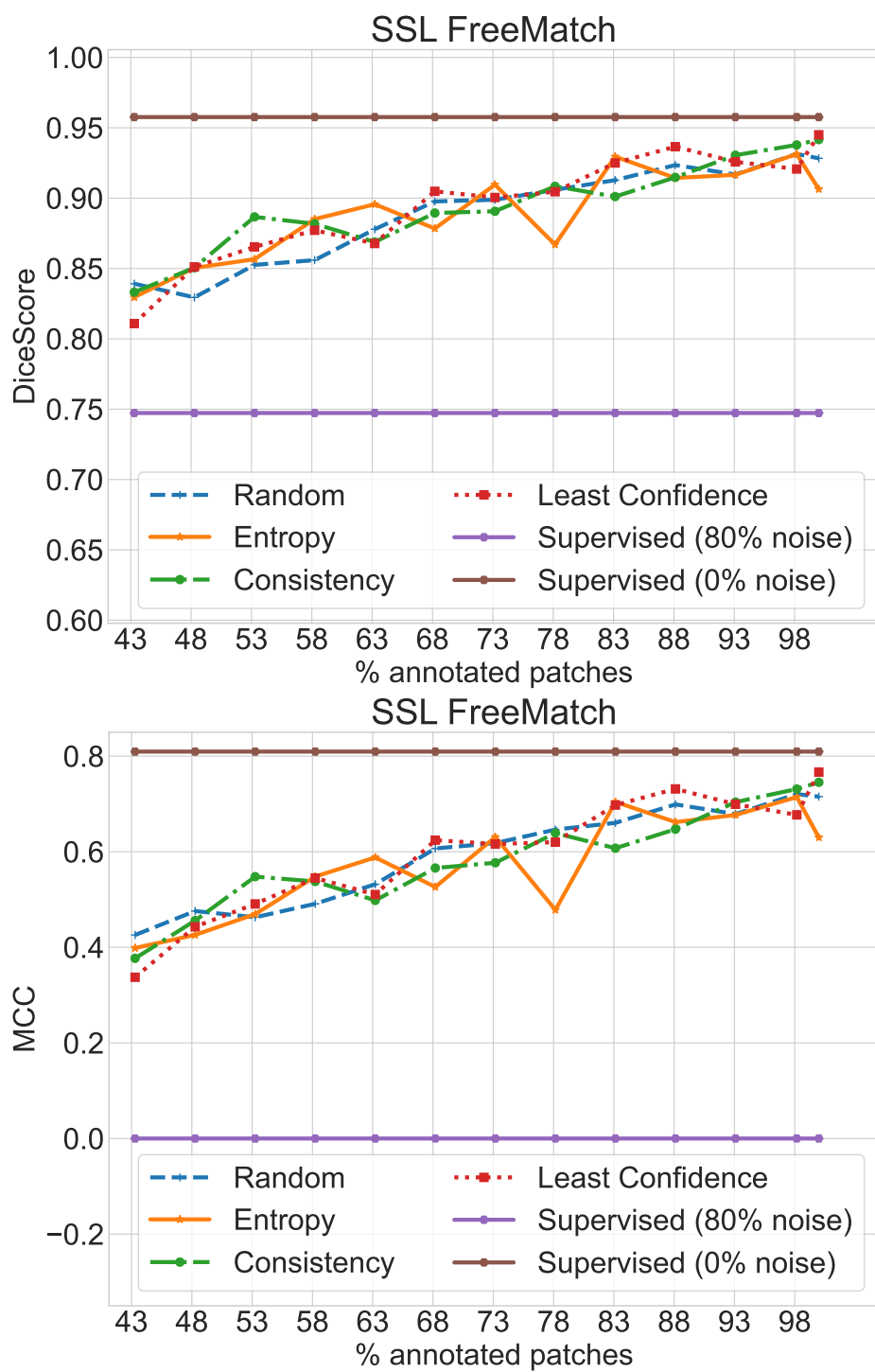


Figure 7: Dice Score (top) and Matthews Correlation Coefficient (bottom) for the FreeMatch SSL strategy.

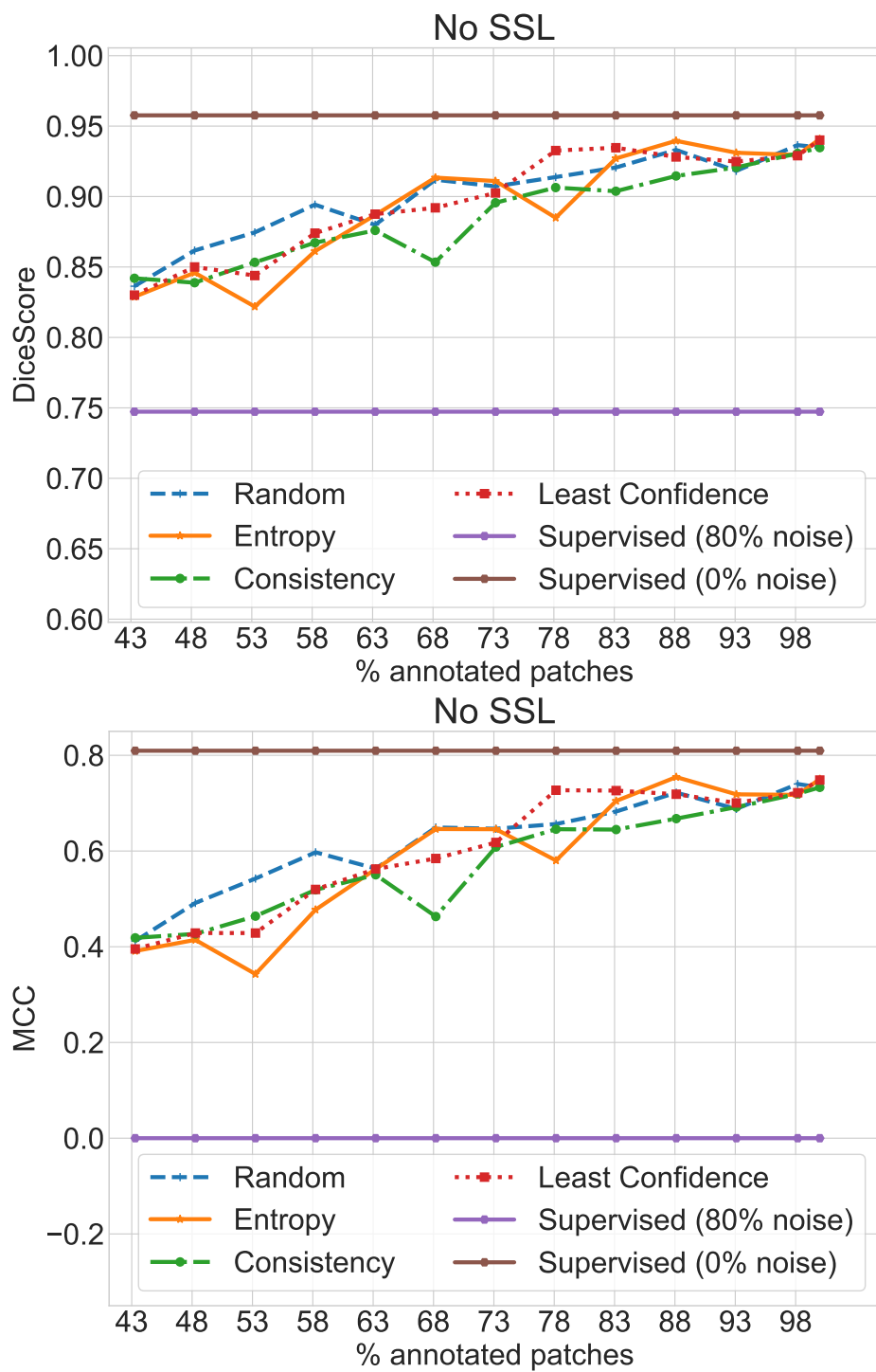


Figure 8: Dice Score (top) and Matthews Correlation Coefficient (bottom) for the no SSL strategy (Only Positive).

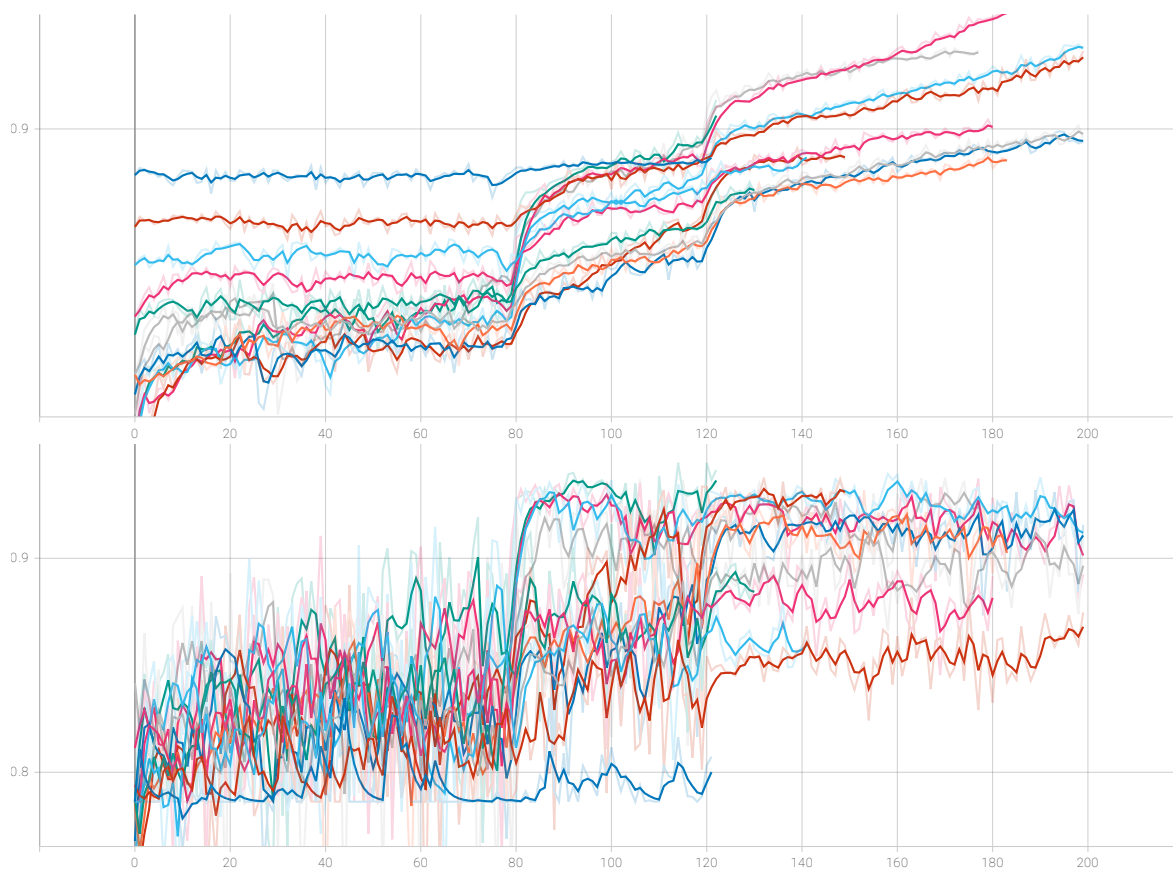


Figure 9: Dice Score for training (top) and validation (bottom) for the FixMatch strategy with random AL selection.

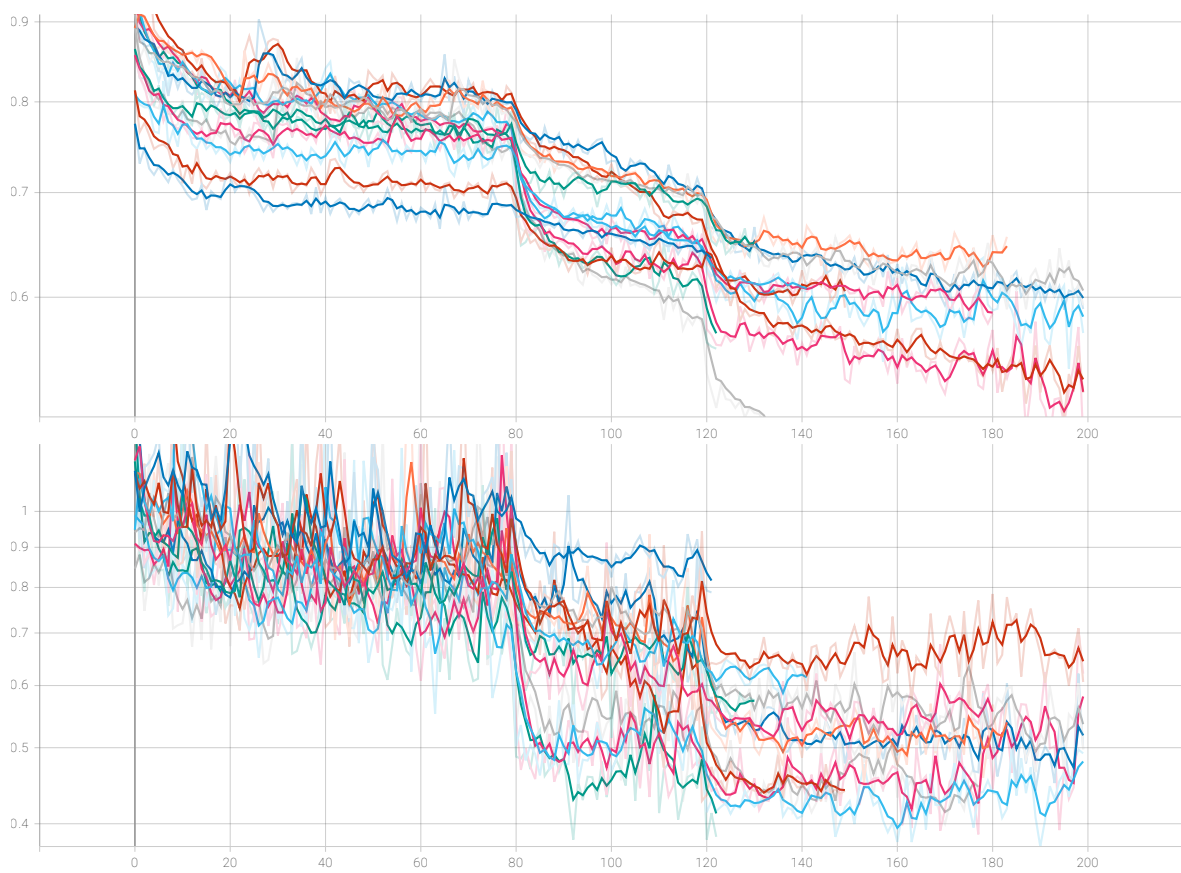


Figure 10: Loss for training (top) and validation (bottom) for the FixMatch strategy with random AL selection.

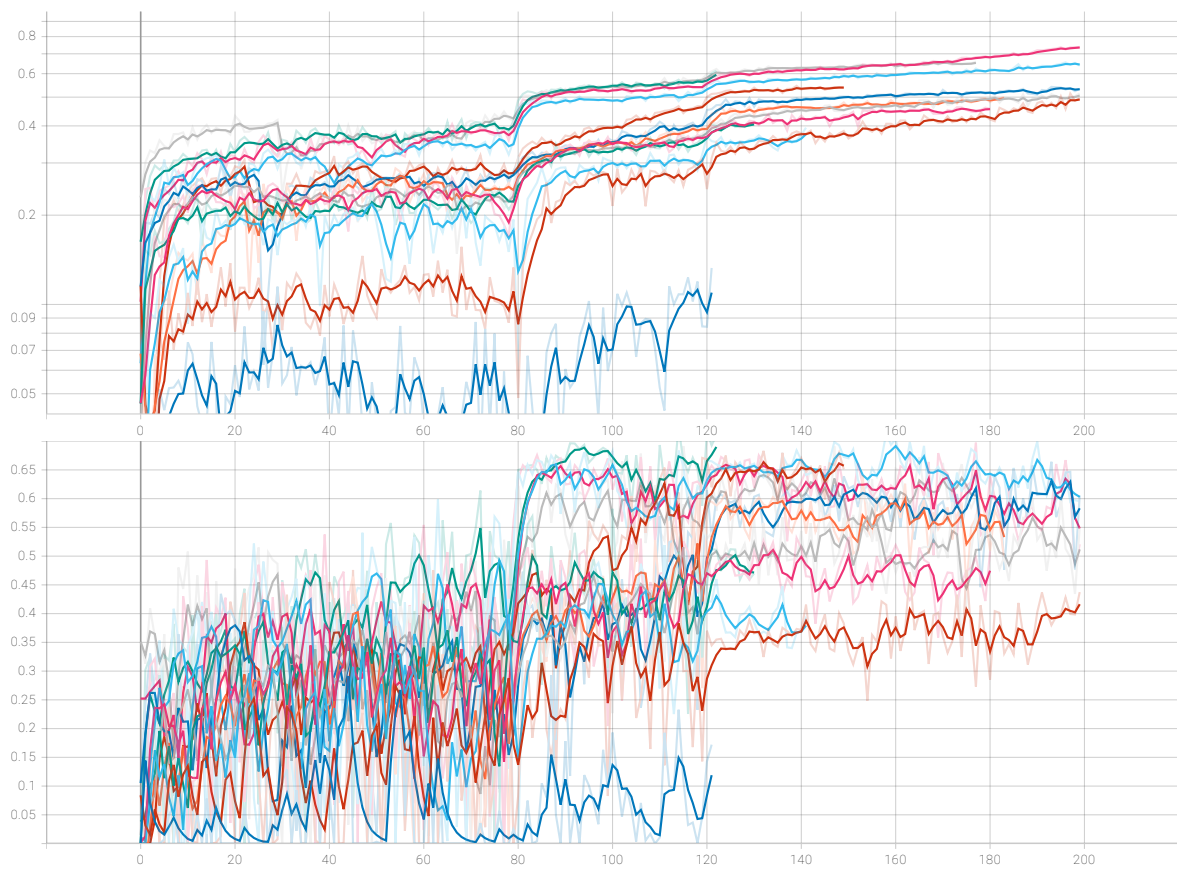


Figure 11: Matthews Correlation Coefficient (MCC) for training (top) and validation (bottom) for the FixMatch strategy with random AL selection.

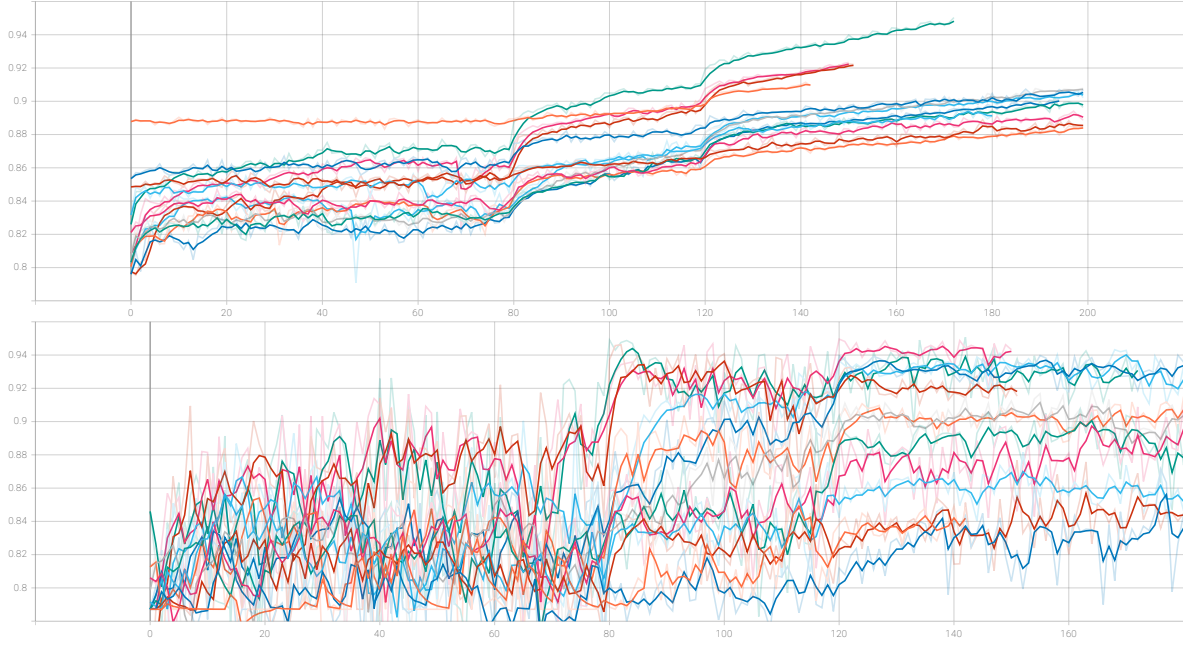


Figure 12: Dice Score for training (top) and validation (bottom) for the FixMatch strategy with entropy-based AL selection.

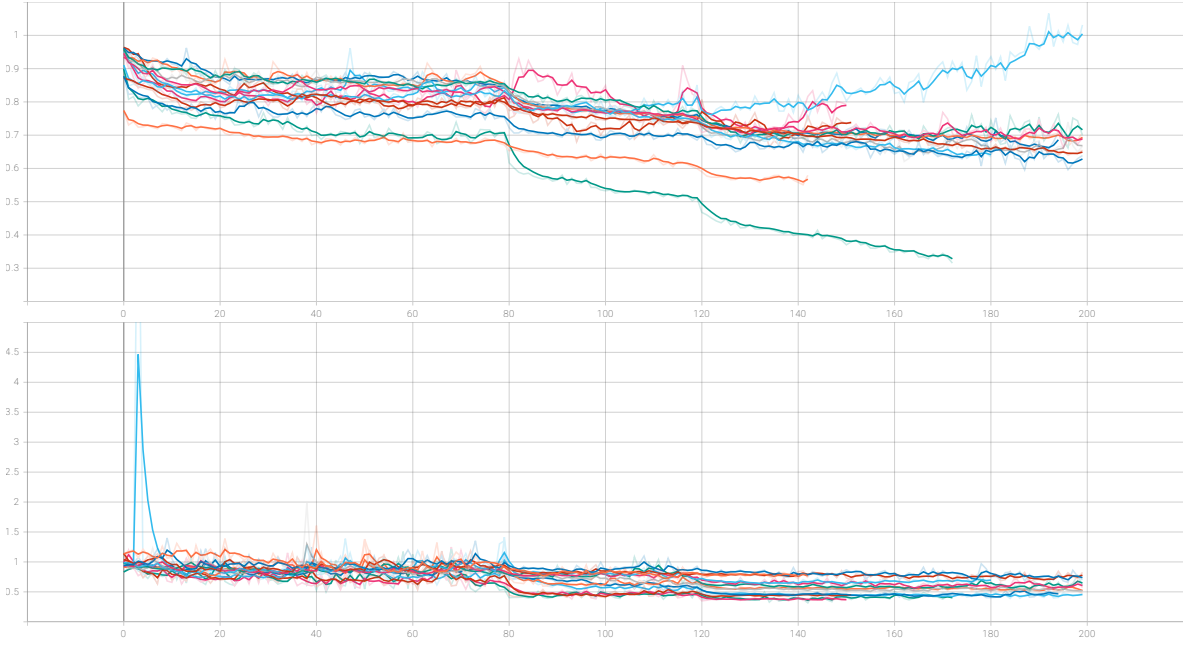


Figure 13: Loss for training (top) and validation (bottom) for the FixMatch strategy with entropy-based AL selection.

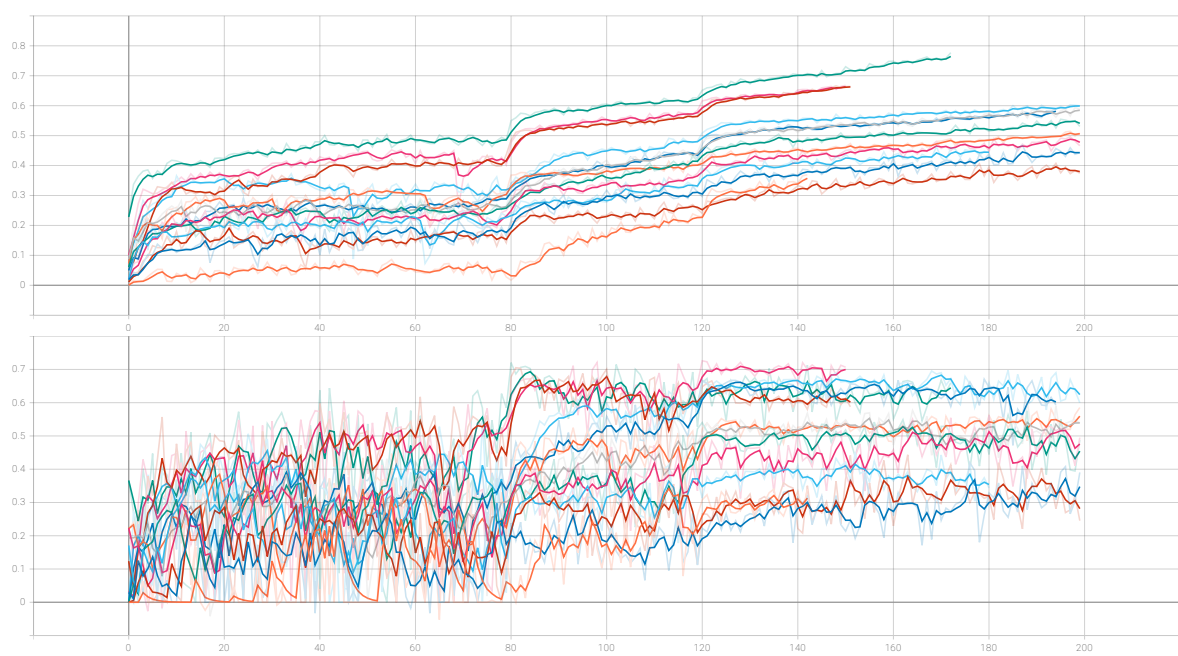


Figure 14: Matthews Correlation Coefficient (MCC) for training (top) and validation (bottom) for the FixMatch strategy with entropy-based AL selection.

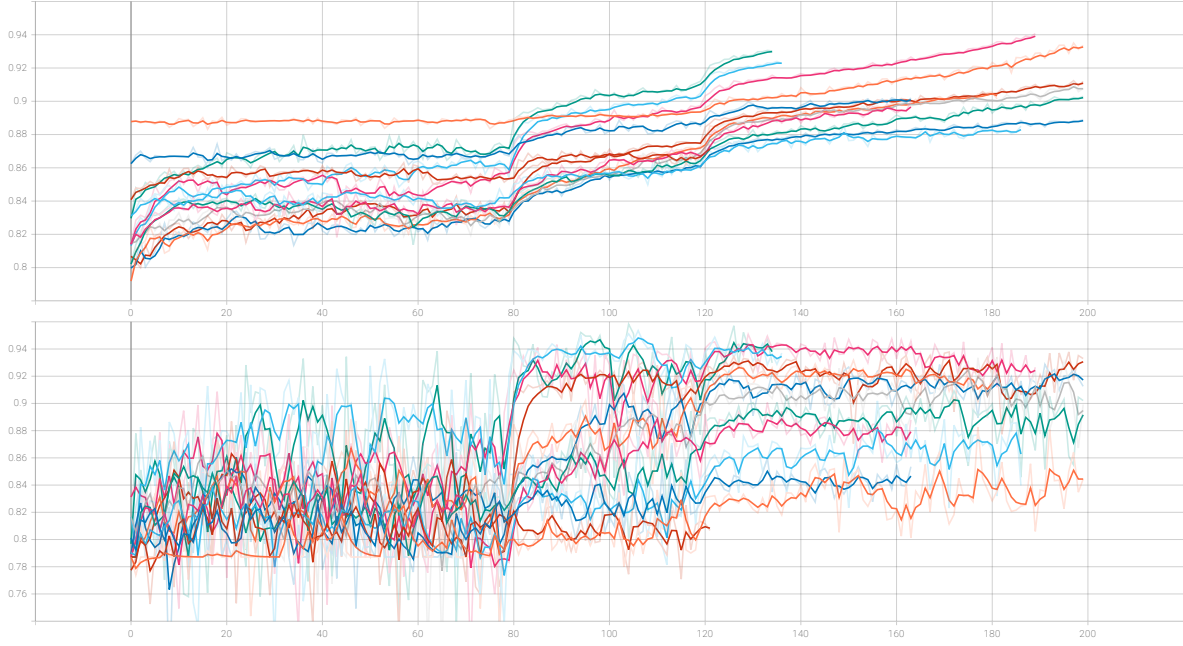


Figure 15: Dice Score for training (top) and validation (bottom) for the FixMatch strategy with leastconfidence AL selection.

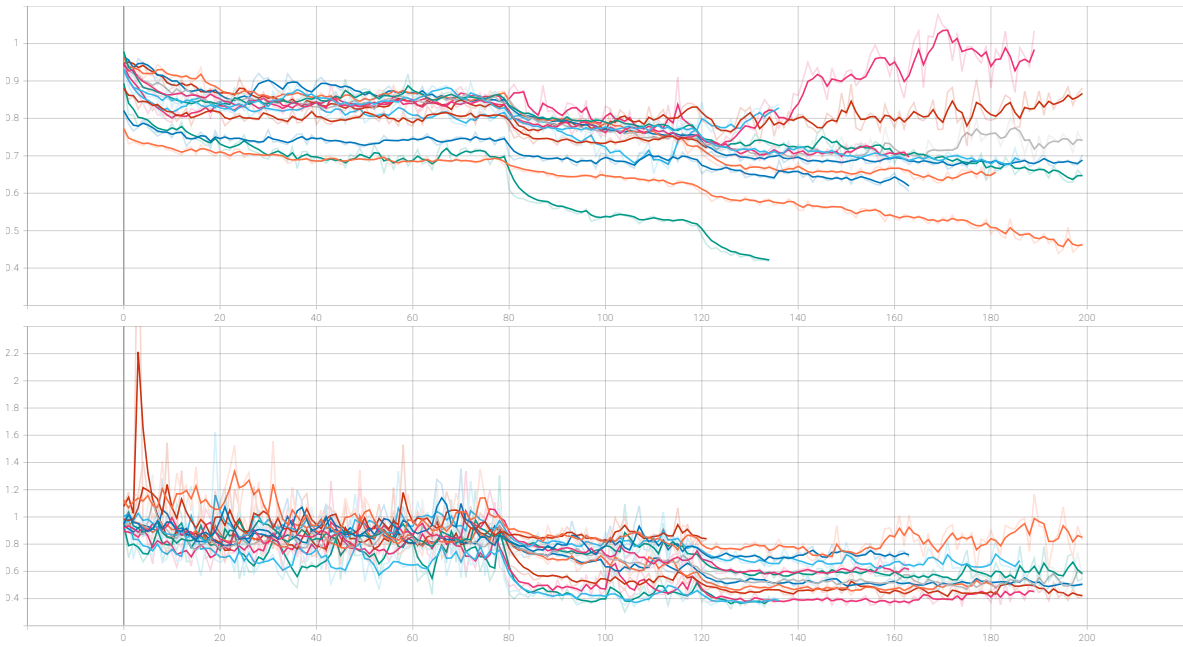


Figure 16: Loss for training (top) and validation (bottom) for the FixMatch strategy with least confidence AL selection.

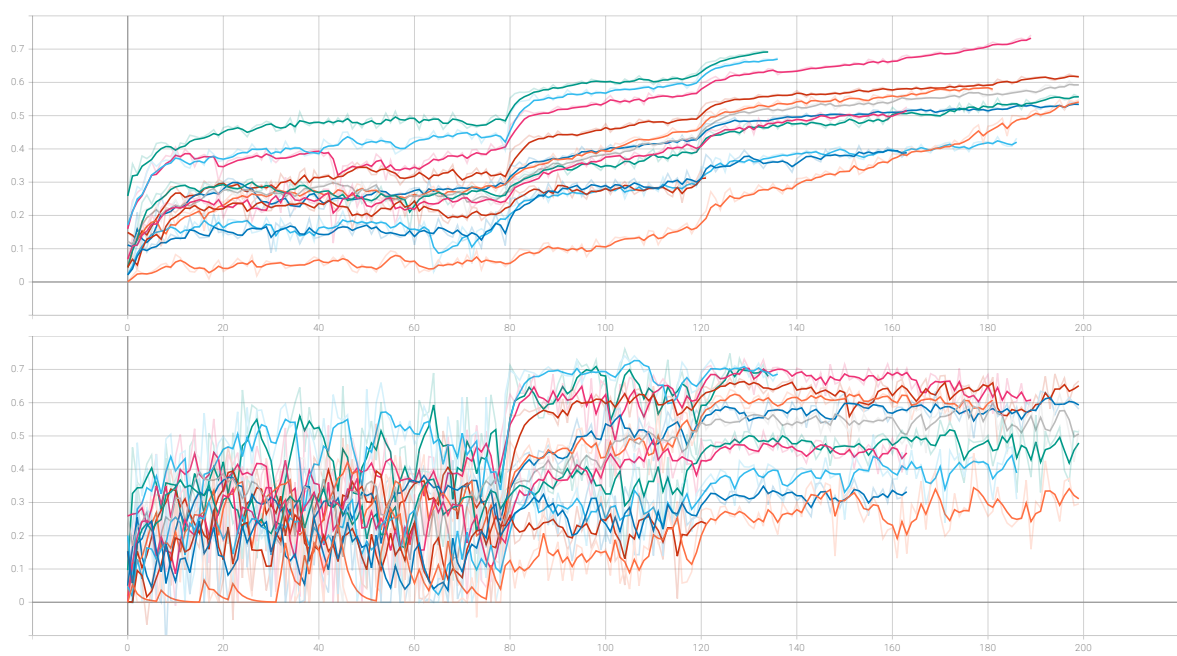


Figure 17: Matthews Correlation Coefficient (MCC) for training (top) and validation (bottom) for the FixMatch strategy with least confidence AL selection.

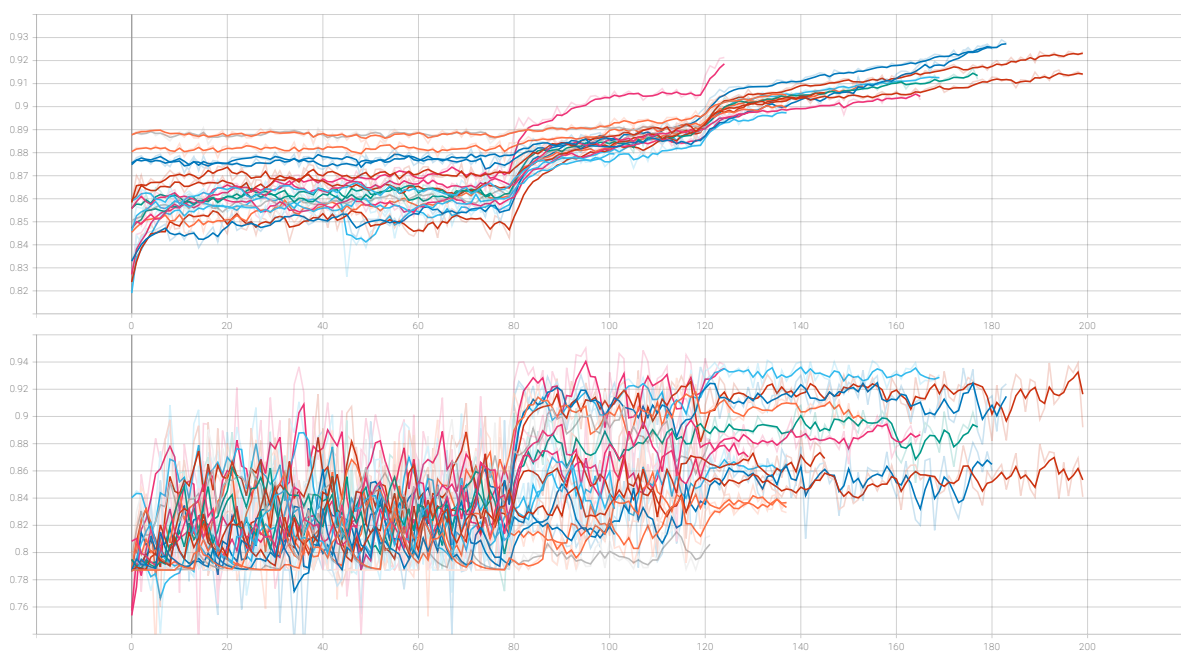


Figure 18: Dice Score for training (top) and validation (bottom) for the FixMatch strategy with consistency-based AL selection.

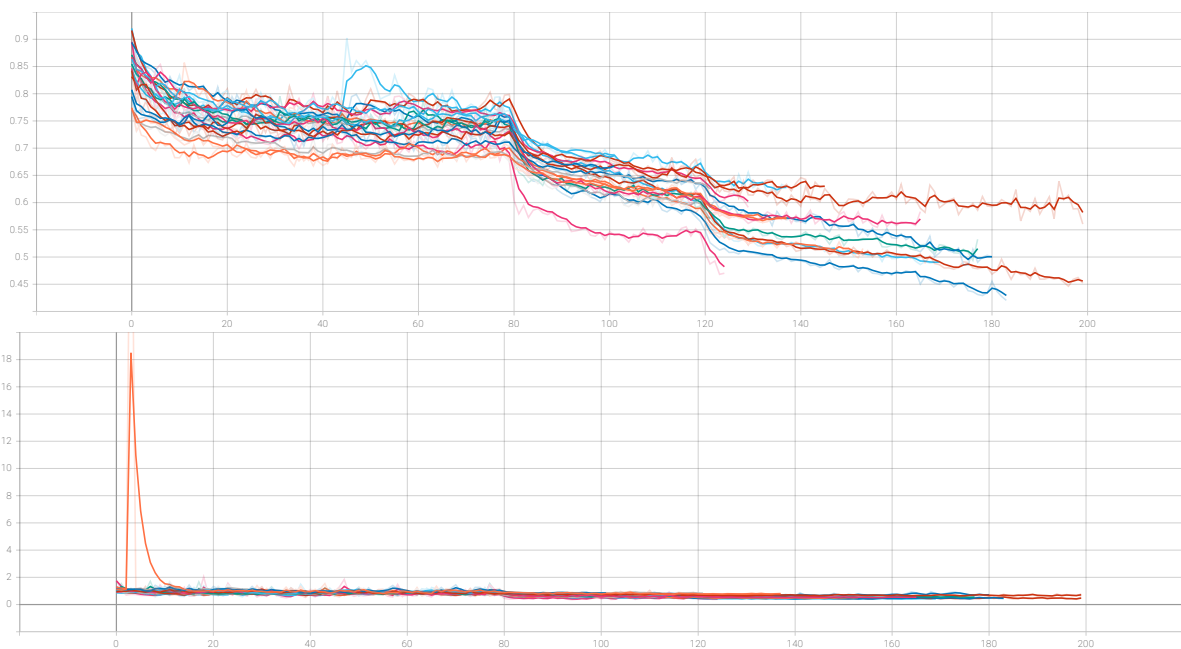


Figure 19: Loss for training (top) and validation (bottom) for the FixMatch strategy with consistency-based AL selection.

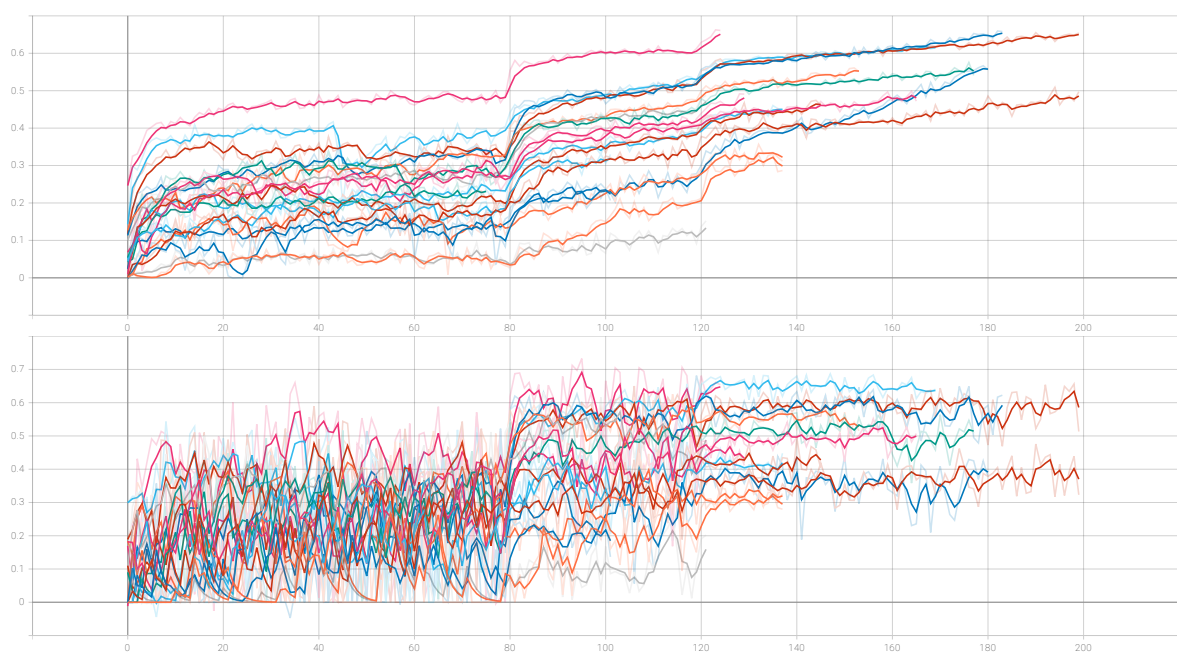


Figure 20: Matthews Correlation Coefficient (MCC) for training (top) and validation (bottom) for the FixMatch strategy with consistency-based AL selection.

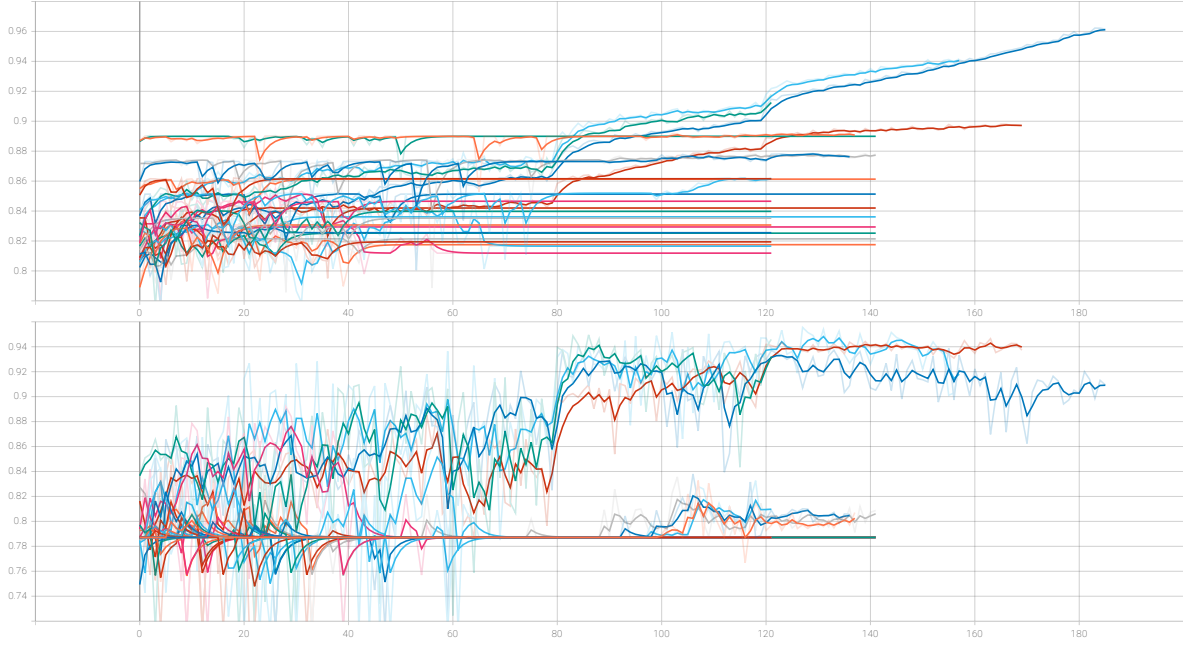


Figure 21: Dice Score for training (top) and validation (bottom) for the FlexMatch strategy with random AL selection.

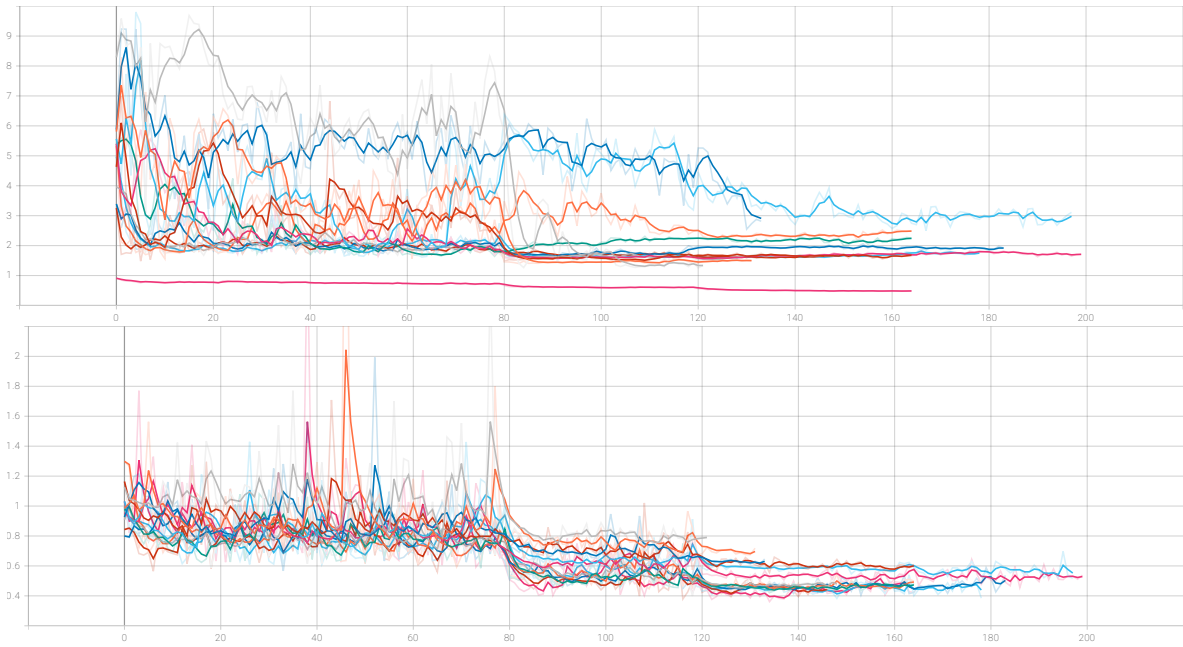


Figure 22: Loss for training (top) and validation (bottom) for the FlexMatch strategy with random AL selection.

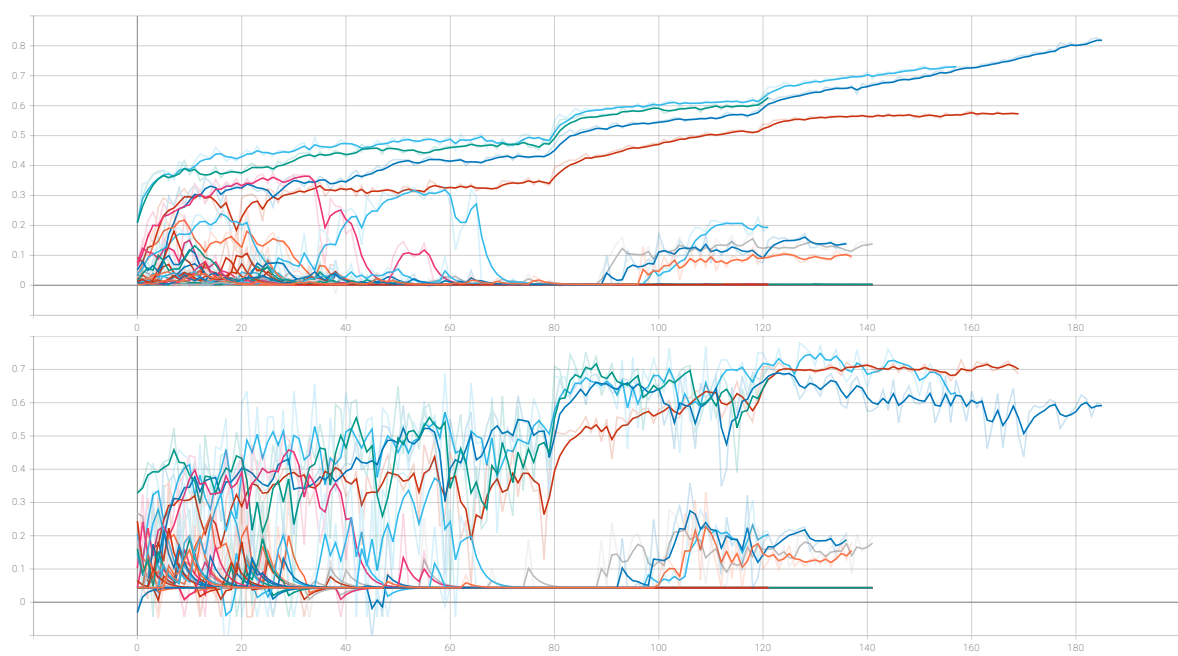


Figure 23: Matthews Correlation Coefficient (MCC) for training (top) and validation (bottom) for the FlexMatch strategy with random AL selection.

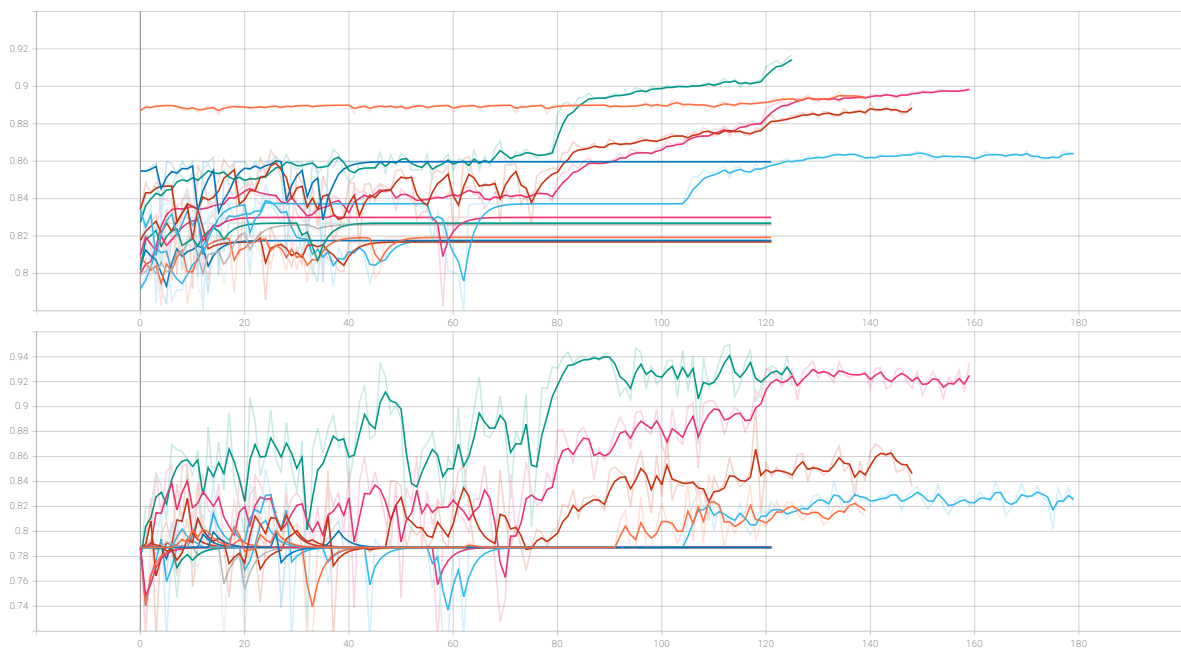


Figure 24: Dice Score for training (top) and validation (bottom) for the FlexMatch strategy with entropy-based AL selection.

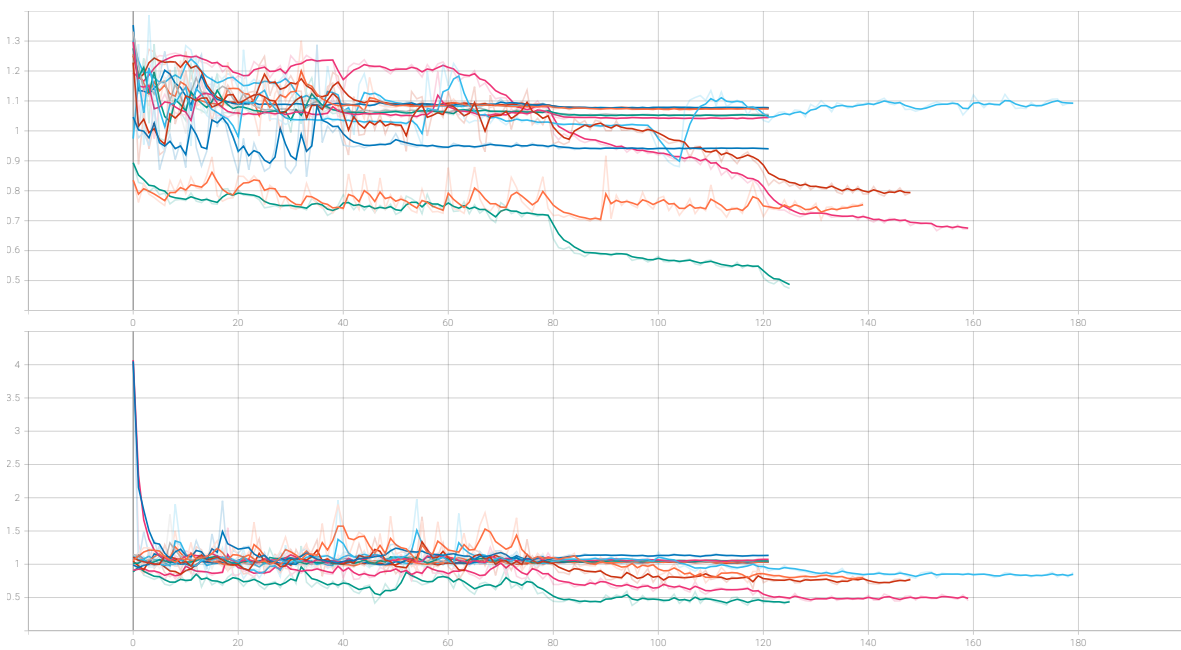


Figure 25: Loss for training (top) and validation (bottom) for the FlexMatch strategy with entropy-based AL selection.

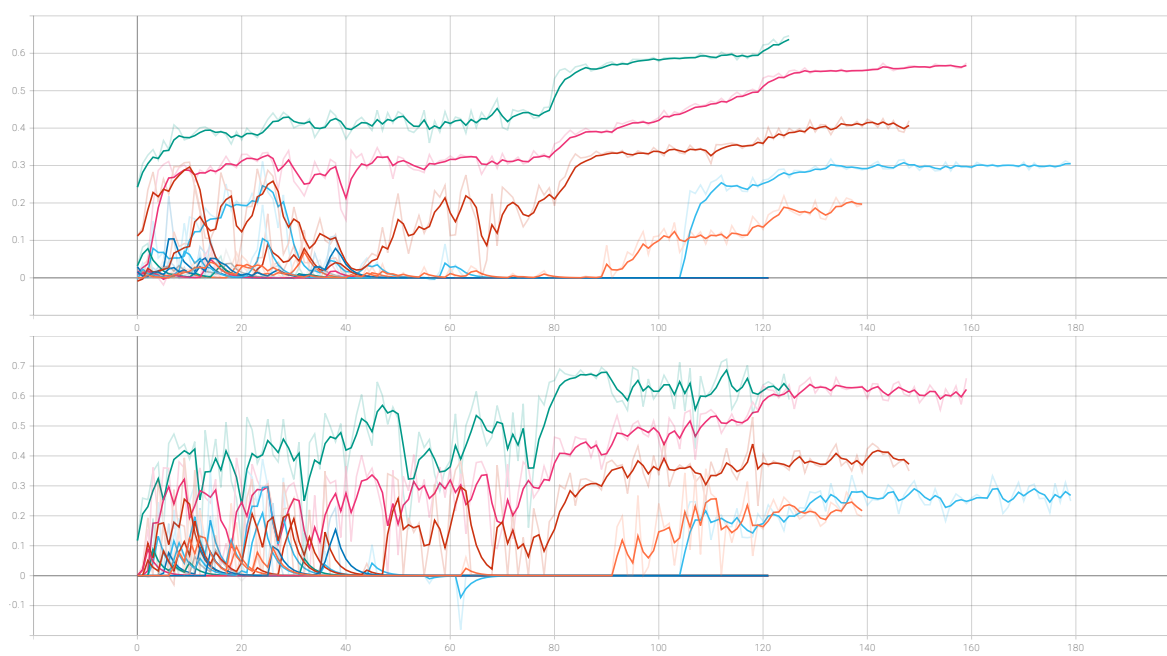


Figure 26: Matthews Correlation Coefficient (MCC) for training (top) and validation (bottom) for the FlexMatch strategy with entropy-based AL selection.

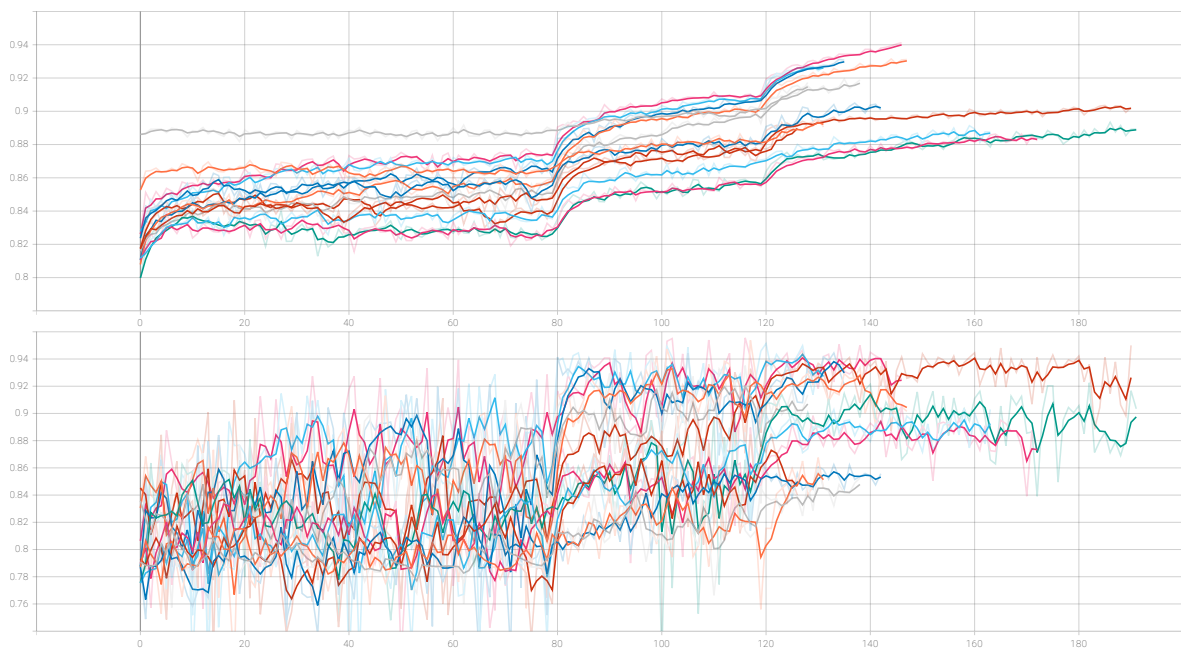


Figure 27: Dice Score for training (top) and validation (bottom) for the FlexMatch strategy with least confidence AL selection.

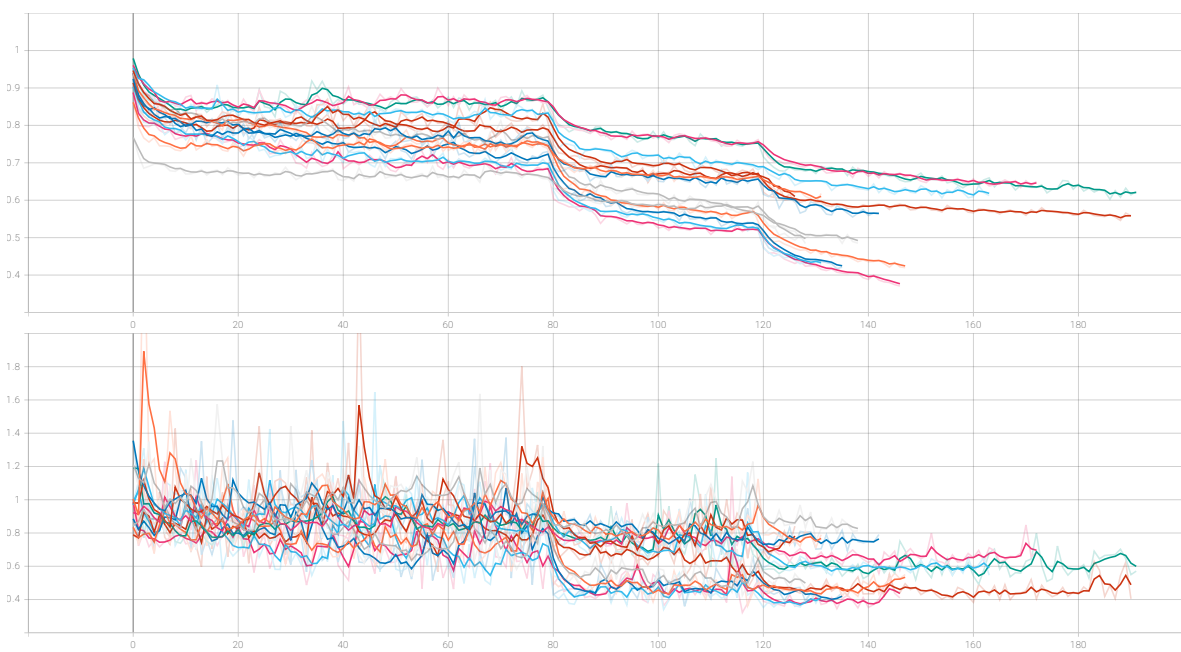


Figure 28: Loss for training (top) and validation (bottom) for the FlexMatch strategy with least confidence AL selection.

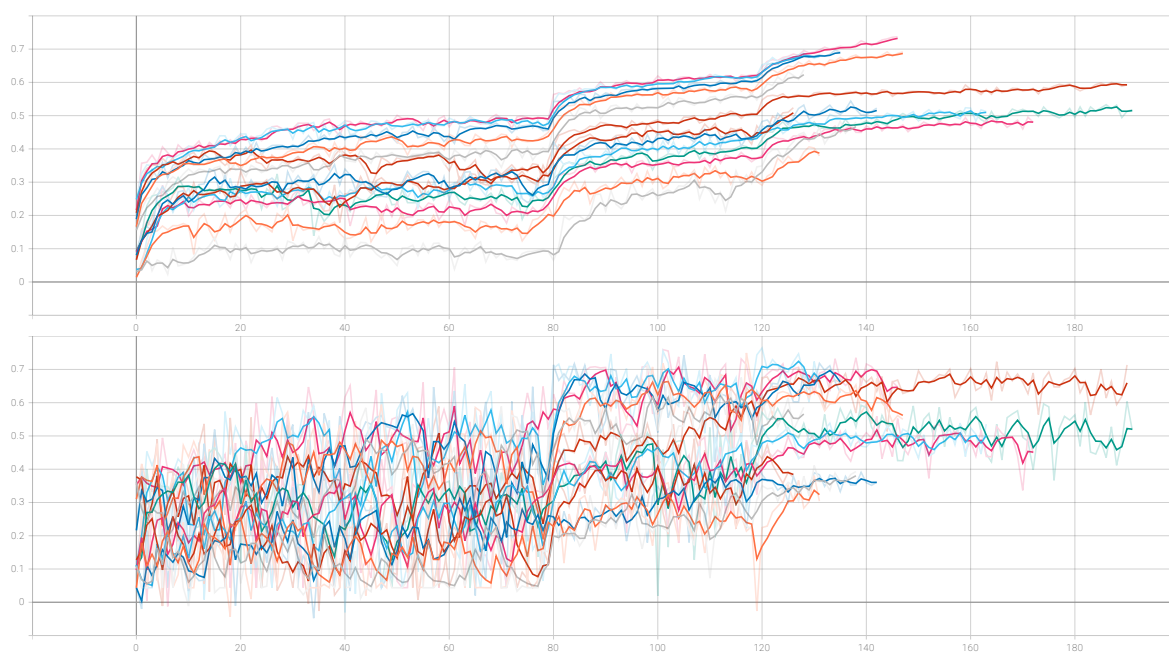


Figure 29: Matthews Correlation Coefficient (MCC) for training (top) and validation (bottom) for the FlexMatch strategy with least confidence AL selection.

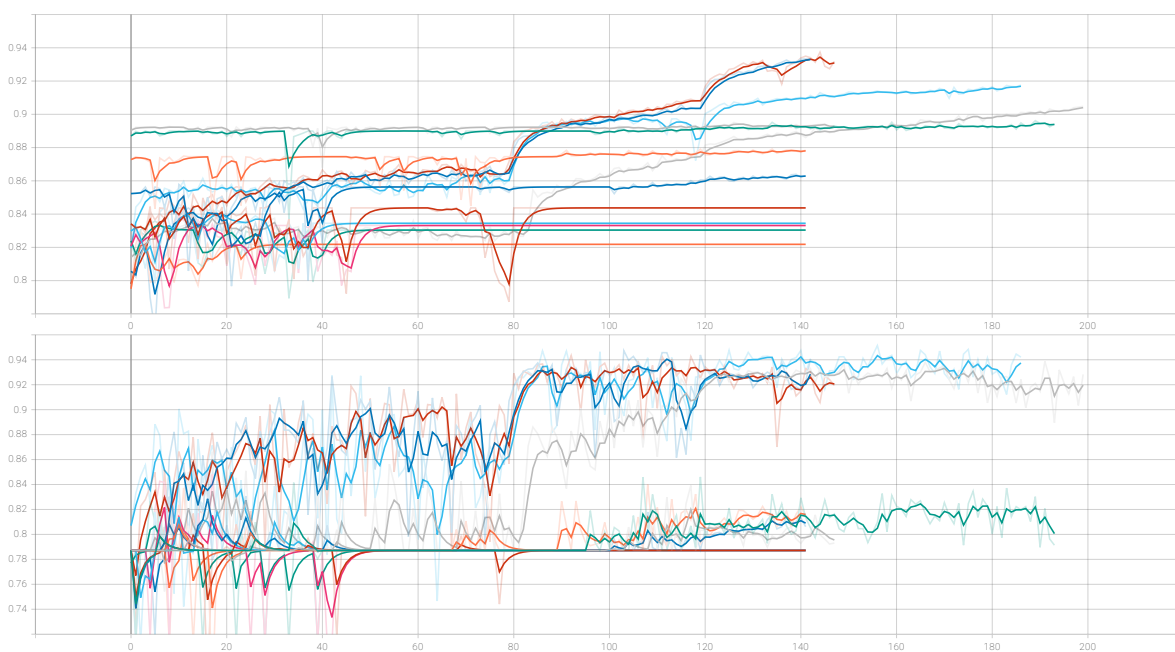


Figure 30: Dice Score for training (top) and validation (bottom) for the FlexMatch strategy with consistency-based AL selection.

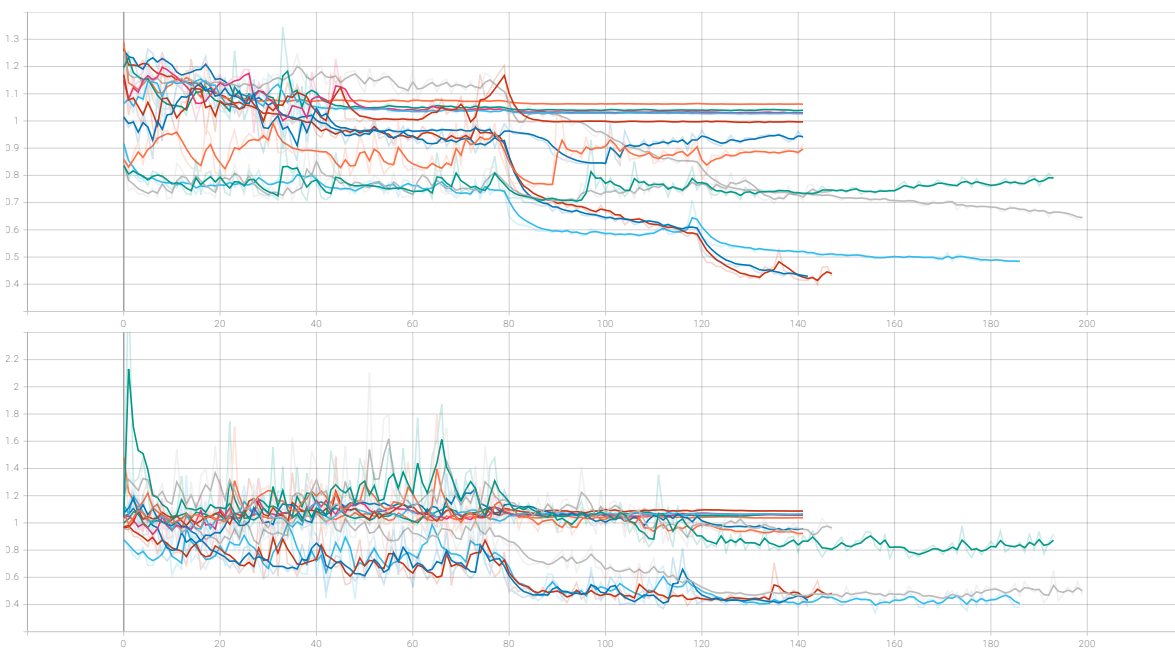


Figure 31: Loss for training (top) and validation (bottom) for the FlexMatch strategy with consistency-based AL selection.

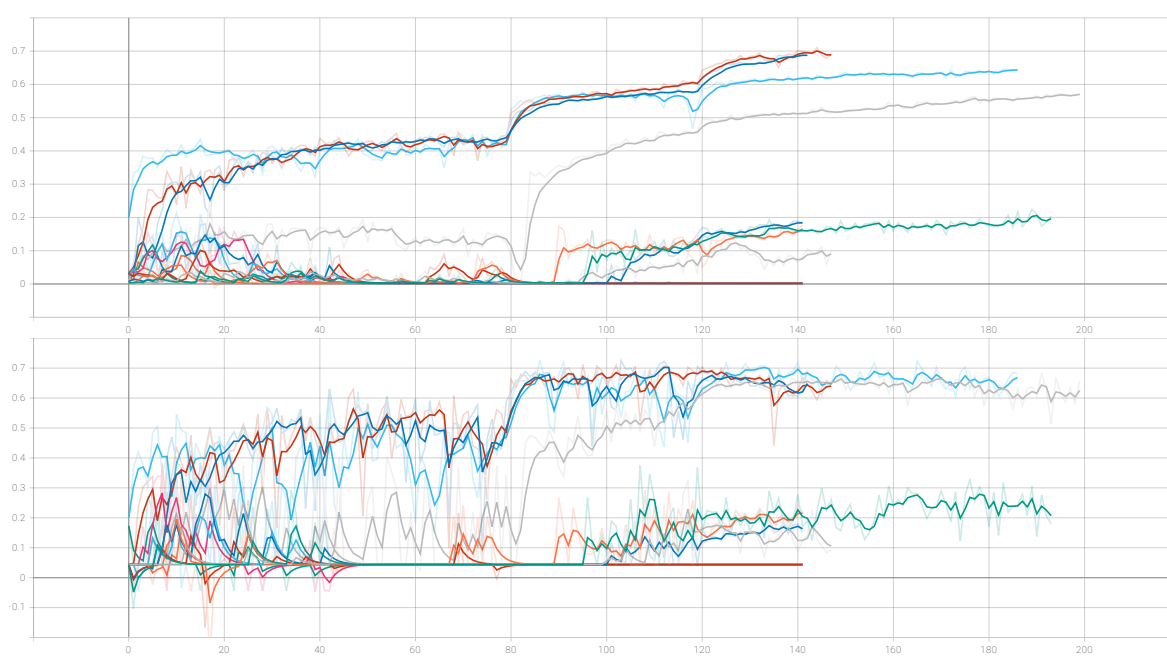


Figure 32: Matthews Correlation Coefficient (MCC) for training (top) and validation (bottom) for the FlexMatch strategy with consistency-based AL selection.



Figure 33: Dice Score for training (top) and validation (bottom) for the FreeMatch strategy with random AL selection.

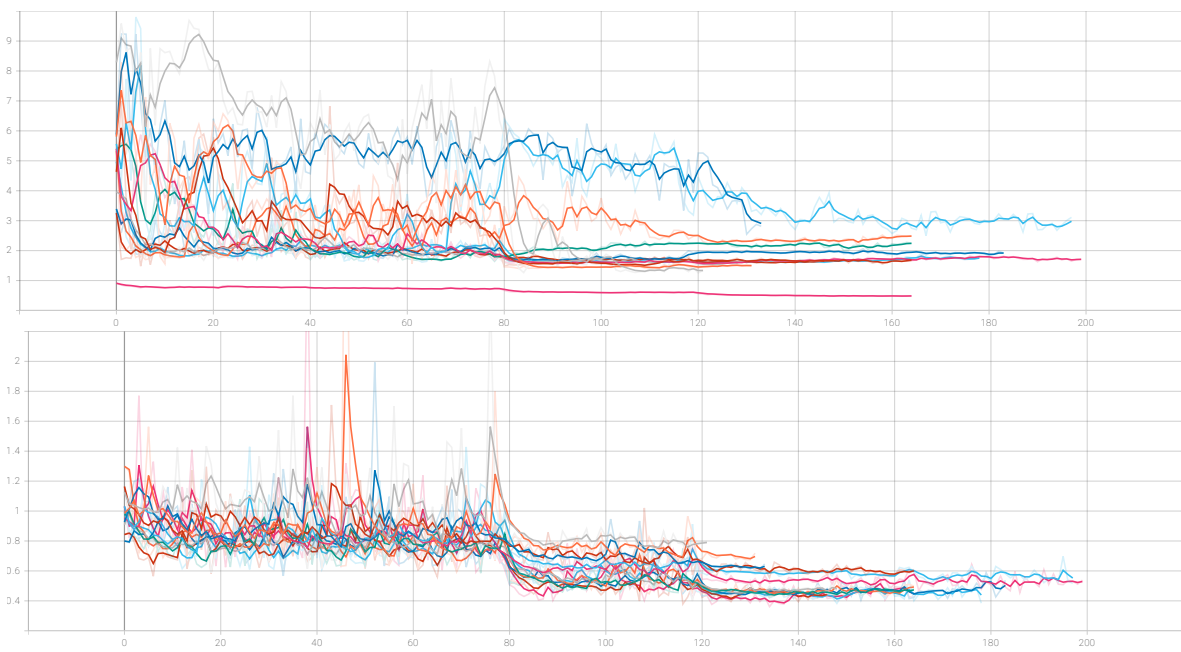


Figure 34: Loss for training (top) and validation (bottom) for the FreeMatch strategy with random AL selection.

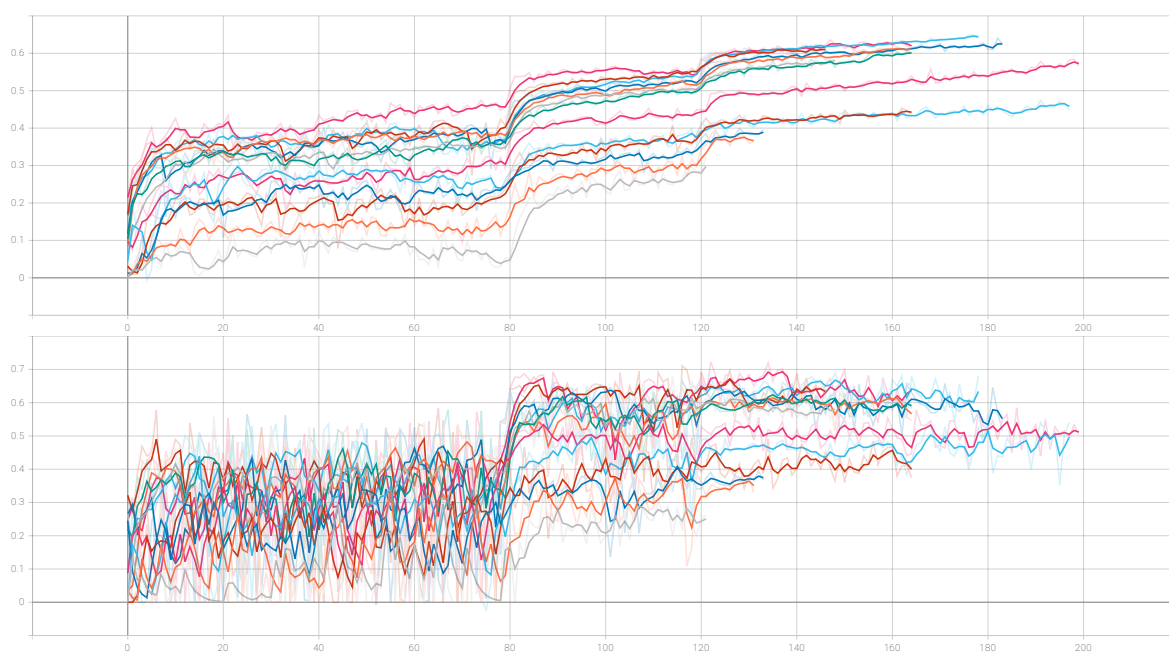


Figure 35: Matthews Correlation Coefficient (MCC) for training (top) and validation (bottom) for the FreeMatch strategy with random AL selection.

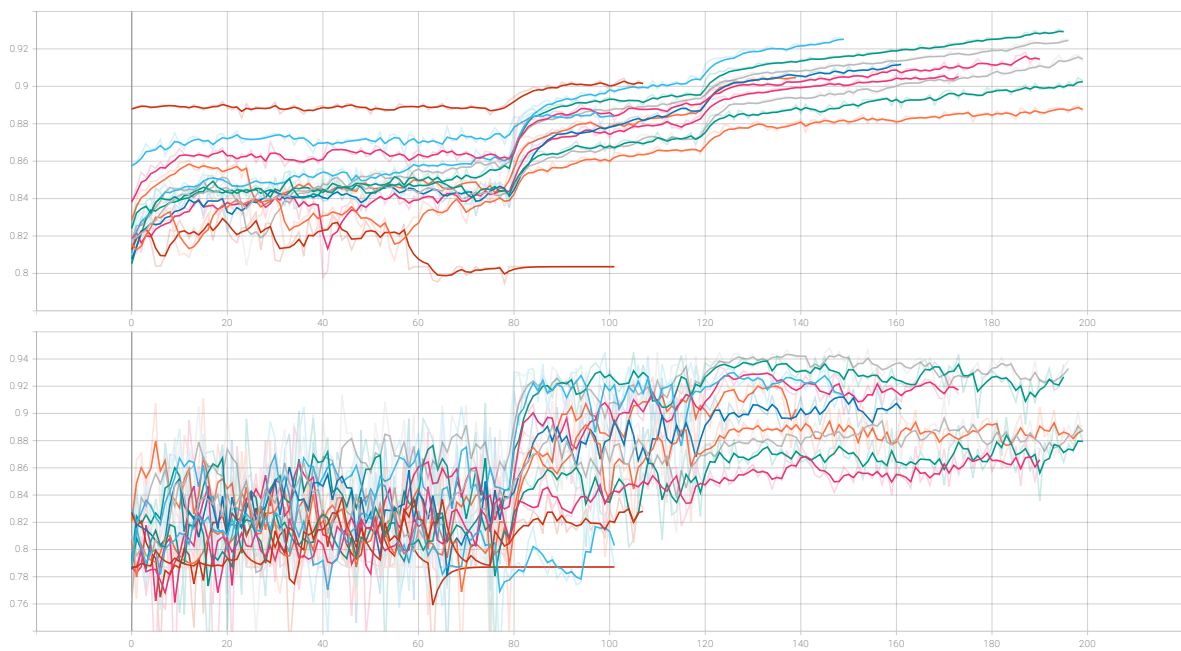


Figure 36: Dice Score for training (top) and validation (bottom) for the FreeMatch strategy with entropy-based AL selection.

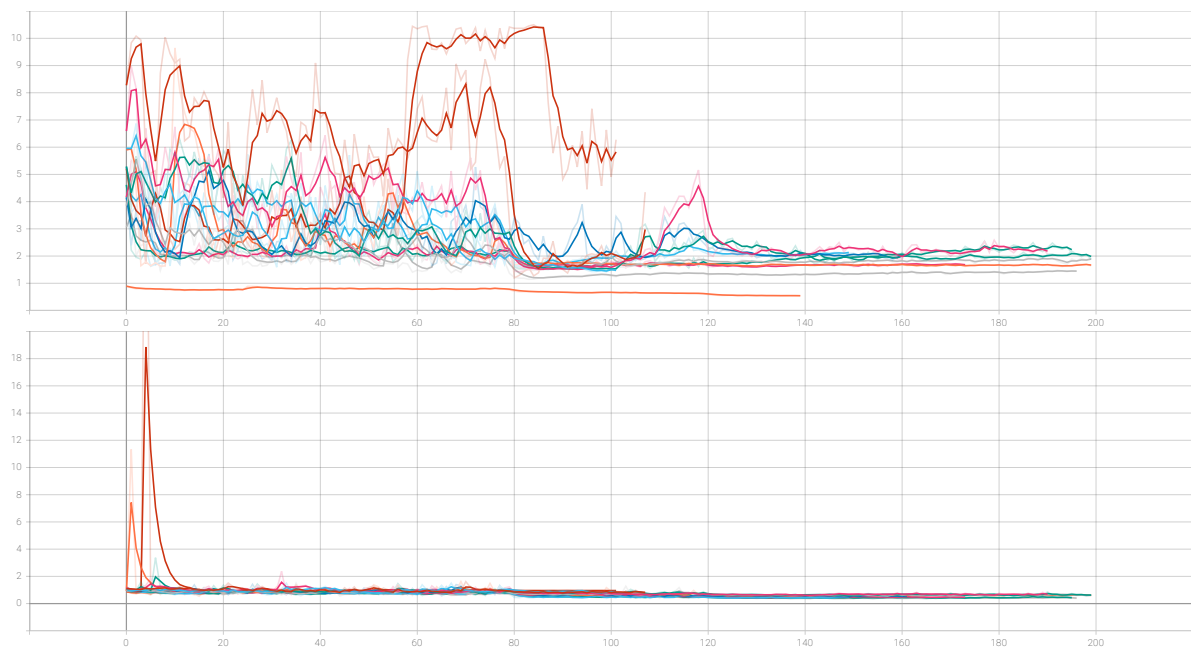


Figure 37: Loss for training (top) and validation (bottom) for the FreeMatch strategy with entropy-based AL selection.

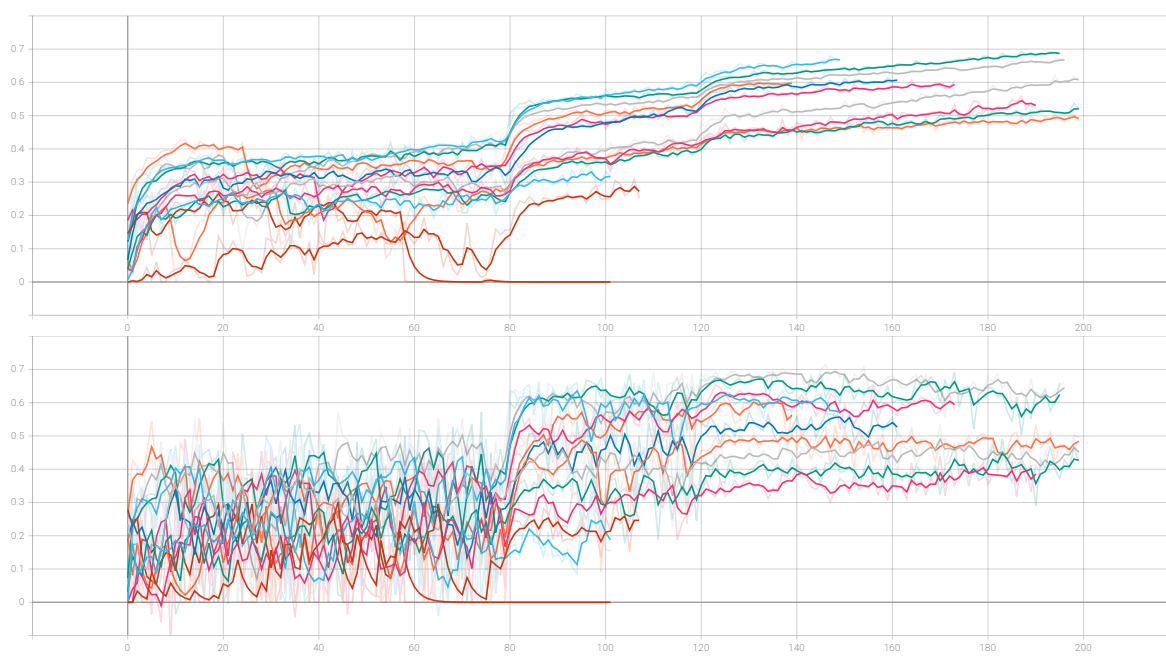


Figure 38: Matthews Correlation Coefficient (MCC) for training (top) and validation (bottom) for the FreeMatch strategy with entropy-based AL selection.

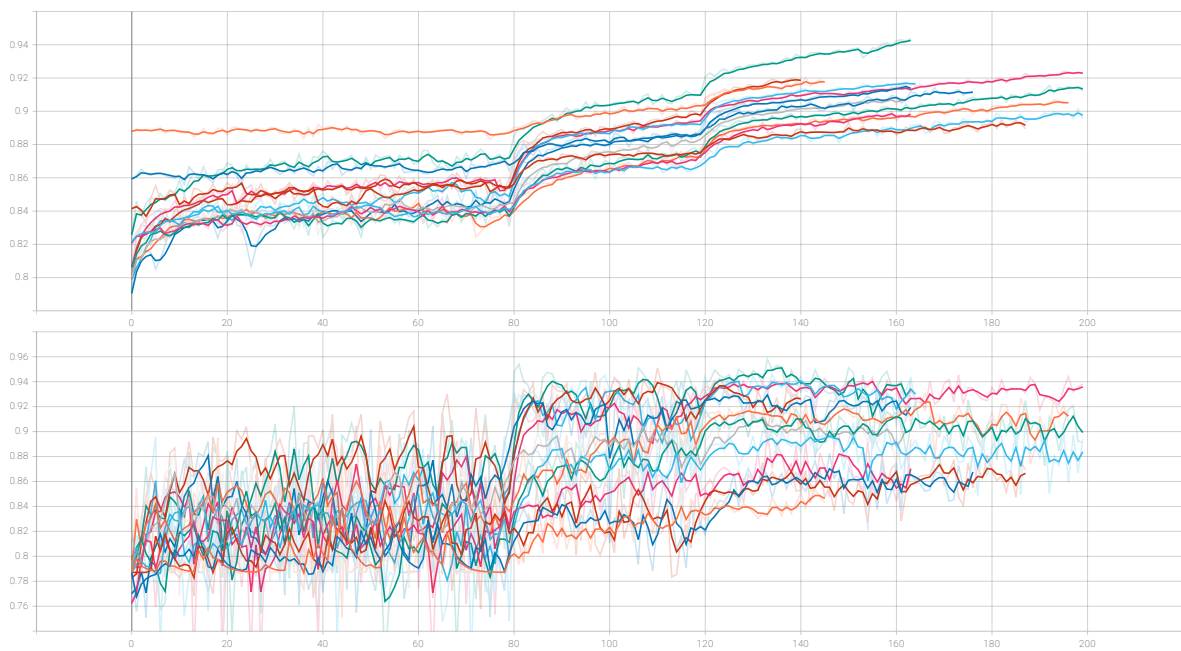


Figure 39: Dice Score for training (top) and validation (bottom) for the FreeMatch strategy with least confidence AL selection.

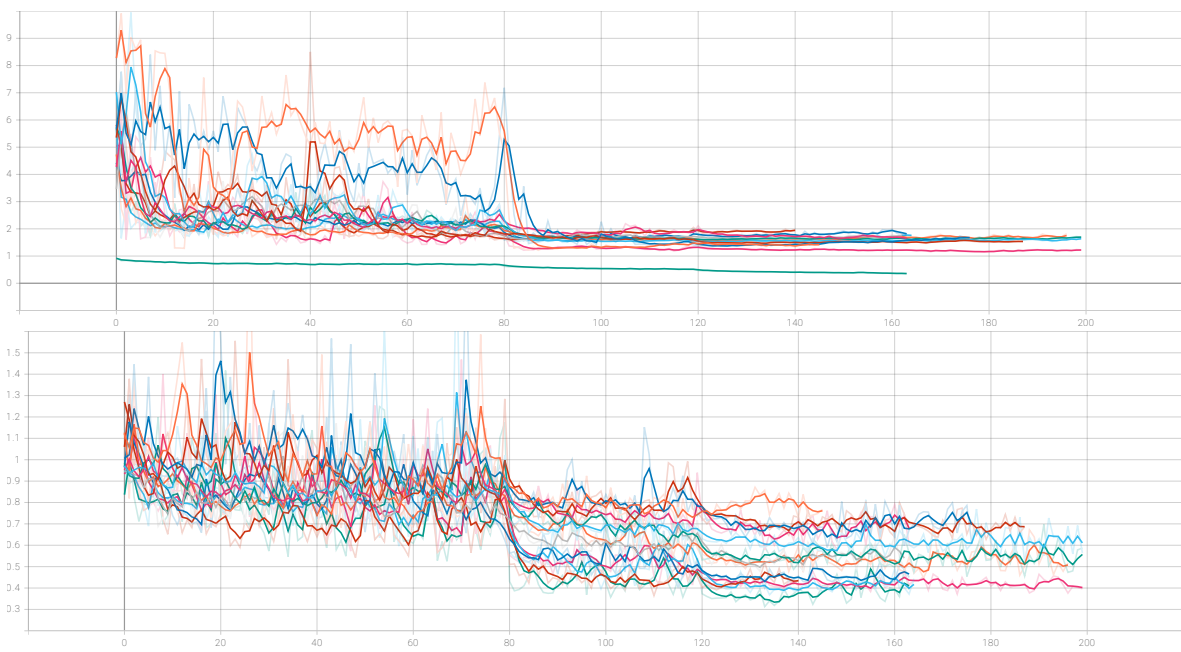


Figure 40: Loss for training (top) and validation (bottom) for the FreeMatch strategy with least confidence AL selection.

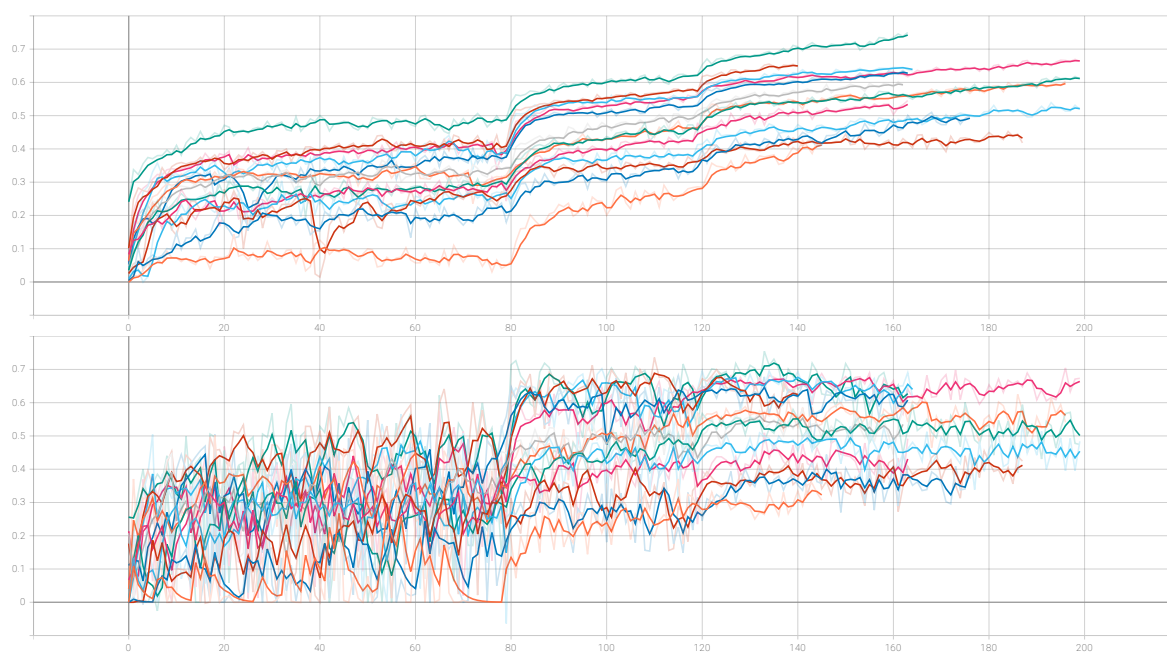


Figure 41: Matthews Correlation Coefficient (MCC) for training (top) and validation (bottom) for the FreeMatch strategy with least confidence AL selection.

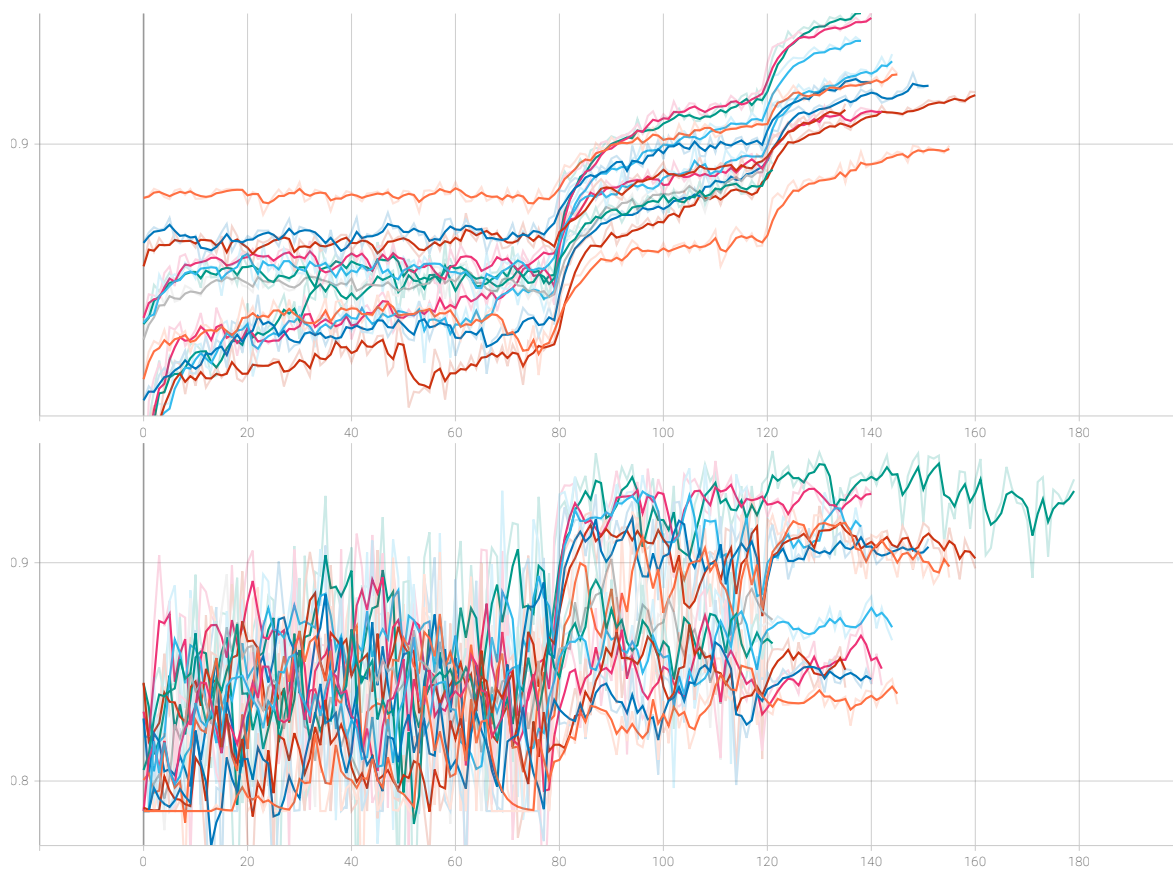


Figure 42: Dice Score for training (top) and validation (bottom) for the FreeMatch strategy with consistency-based AL selection.

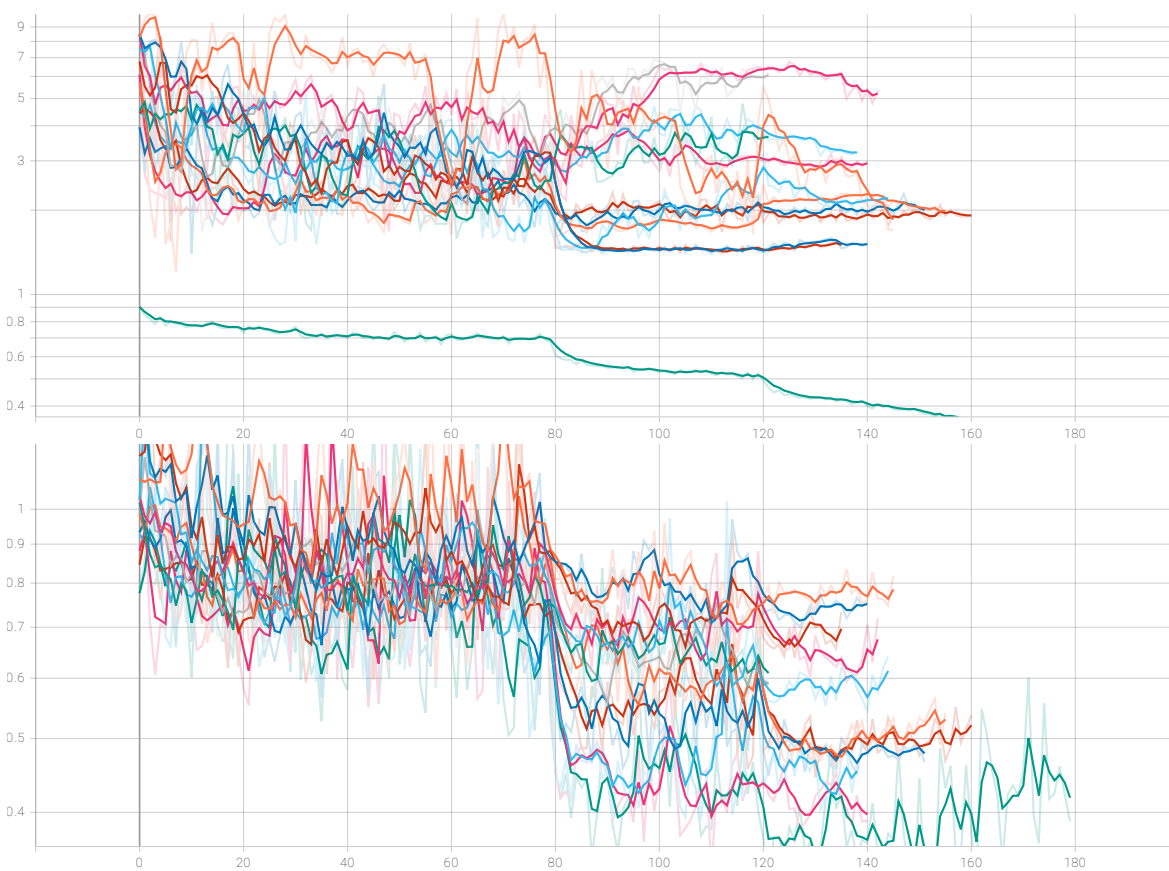


Figure 43: Loss for training (top) and validation (bottom) for the FreeMatch strategy with consistency-based AL selection.

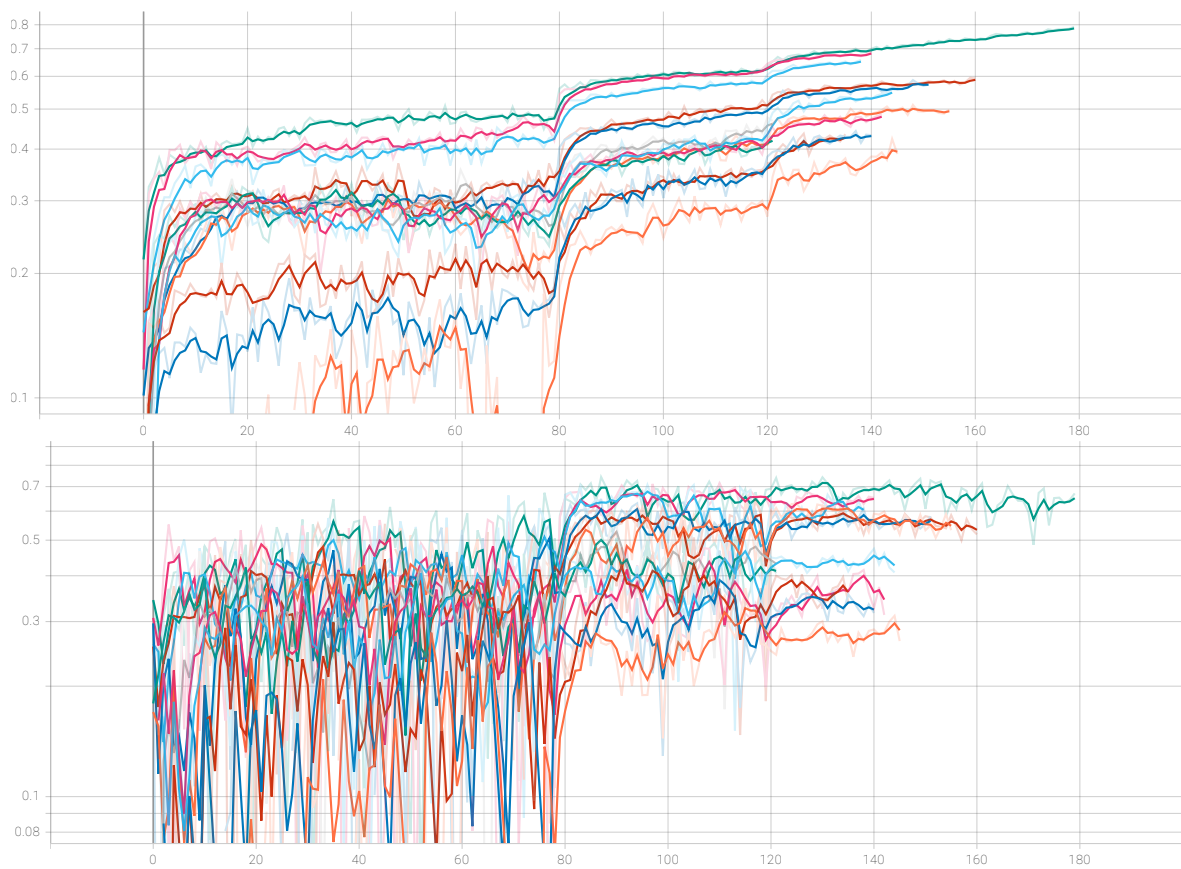


Figure 44: Matthews Correlation Coefficient (MCC) for training (top) and validation (bottom) for the FreeMatch strategy with consistency-based AL selection.

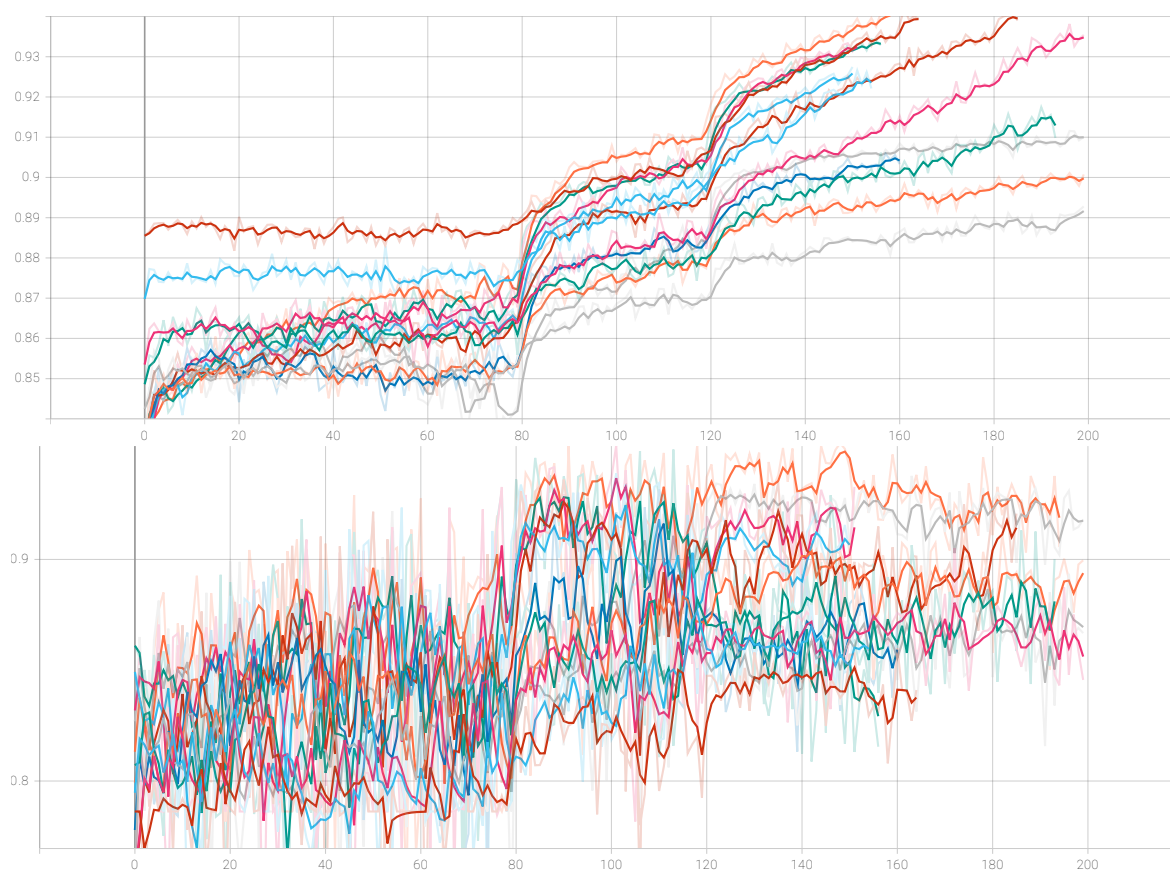


Figure 45: Dice Score for training (top) and validation (bottom) for the no SSL strategy with random AL selection.

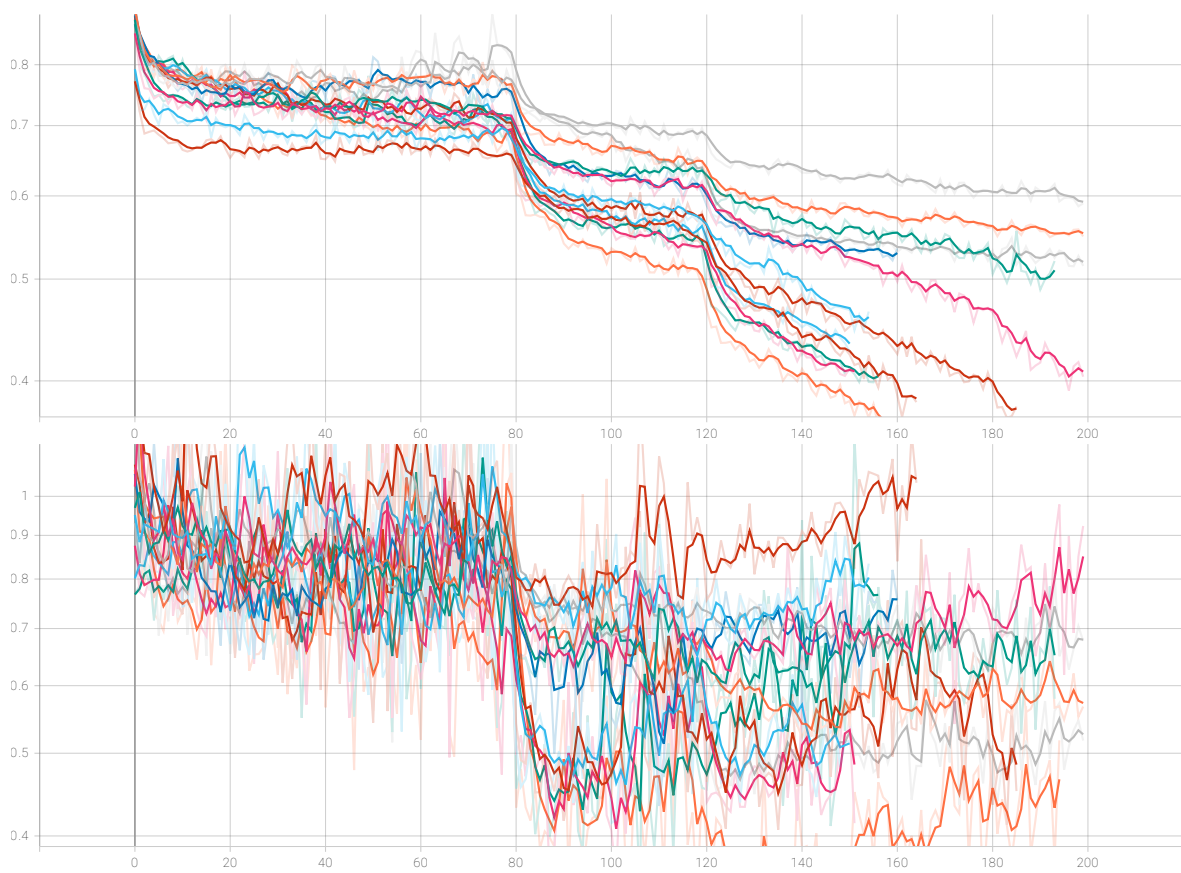


Figure 46: Loss for training (top) and validation (bottom) for the no SSL strategy with random AL selection.

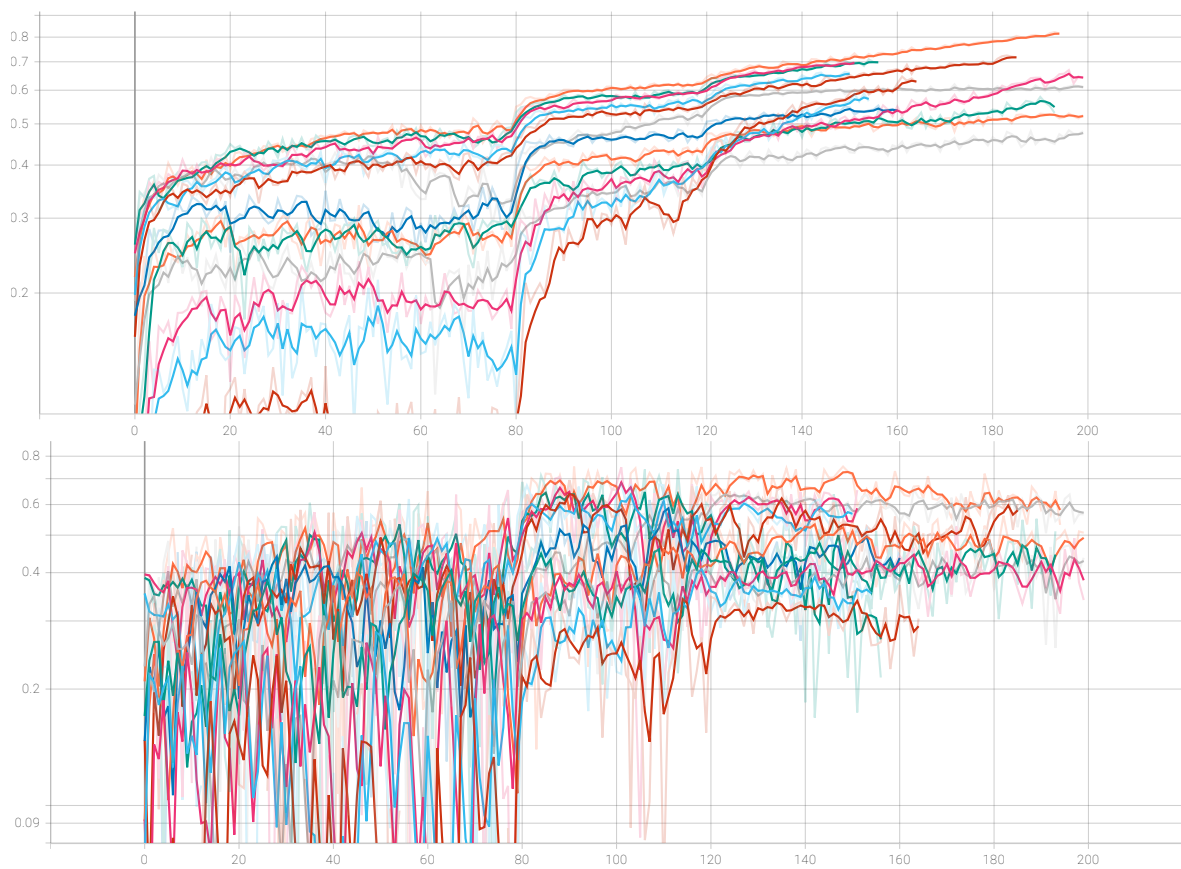


Figure 47: Matthews Correlation Coefficient (MCC) for training (top) and validation (bottom) for the no SSL strategy with random AL selection.

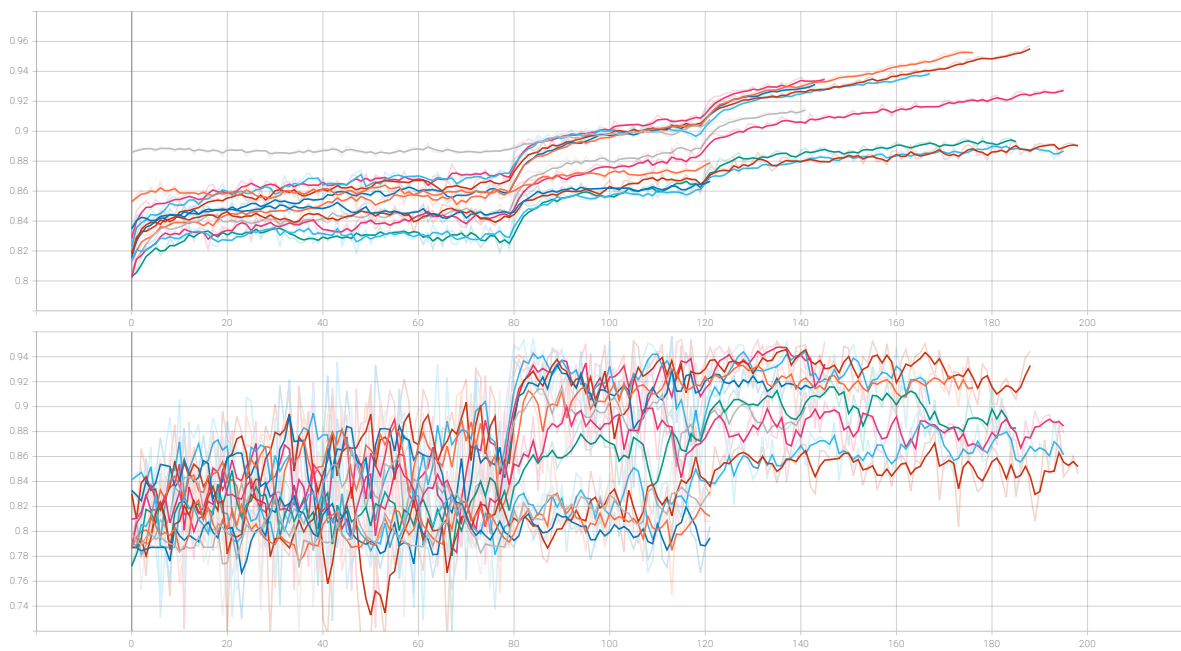


Figure 48: Dice Score for training (top) and validation (bottom) for the no SSL strategy with entropy-based AL selection.

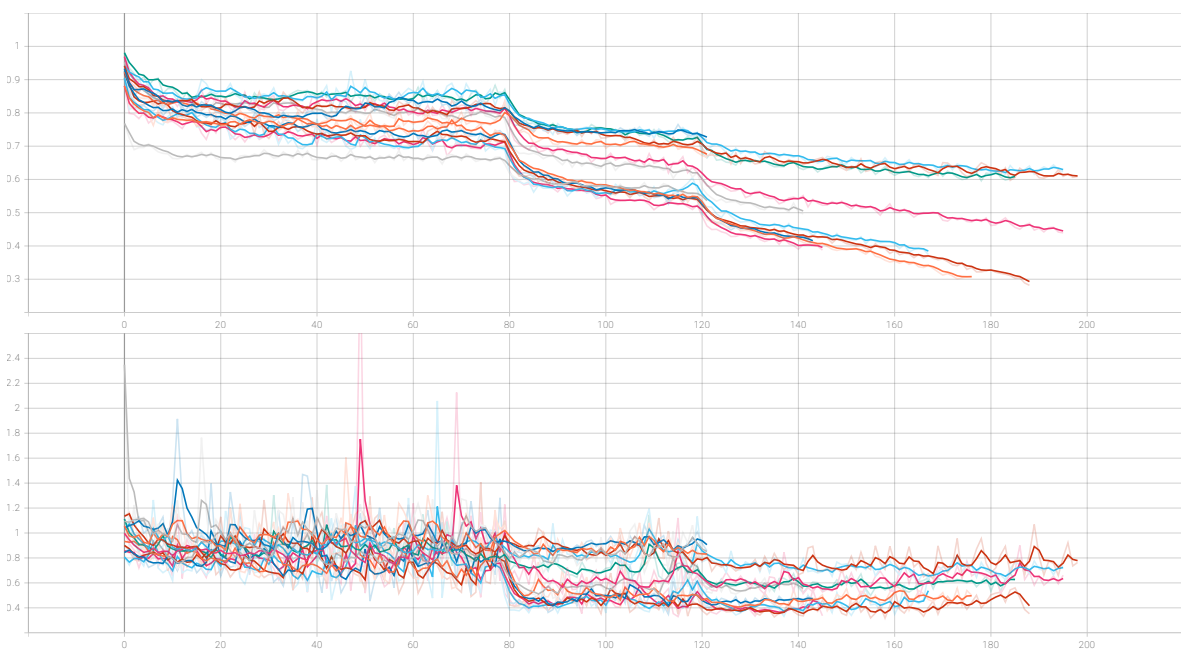


Figure 49: Loss for training (top) and validation (bottom) for the no SSL strategy with entropy-based AL selection.

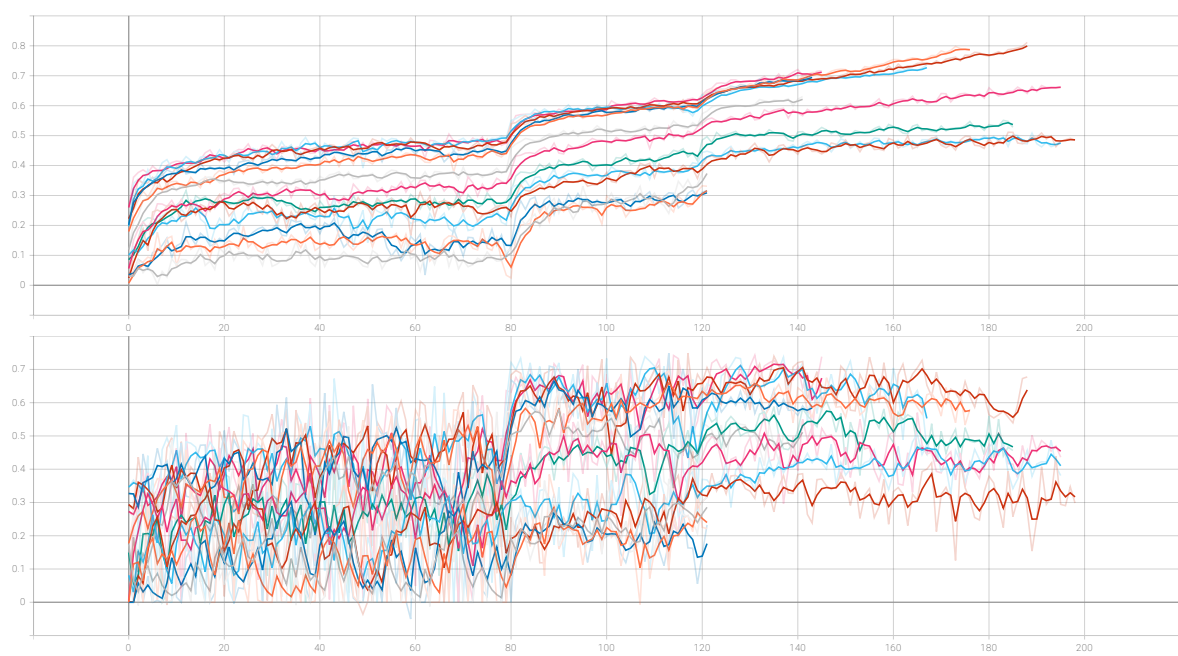


Figure 50: Matthews Correlation Coefficient (MCC) for training (top) and validation (bottom) for the no SSL strategy with entropy-based AL selection.

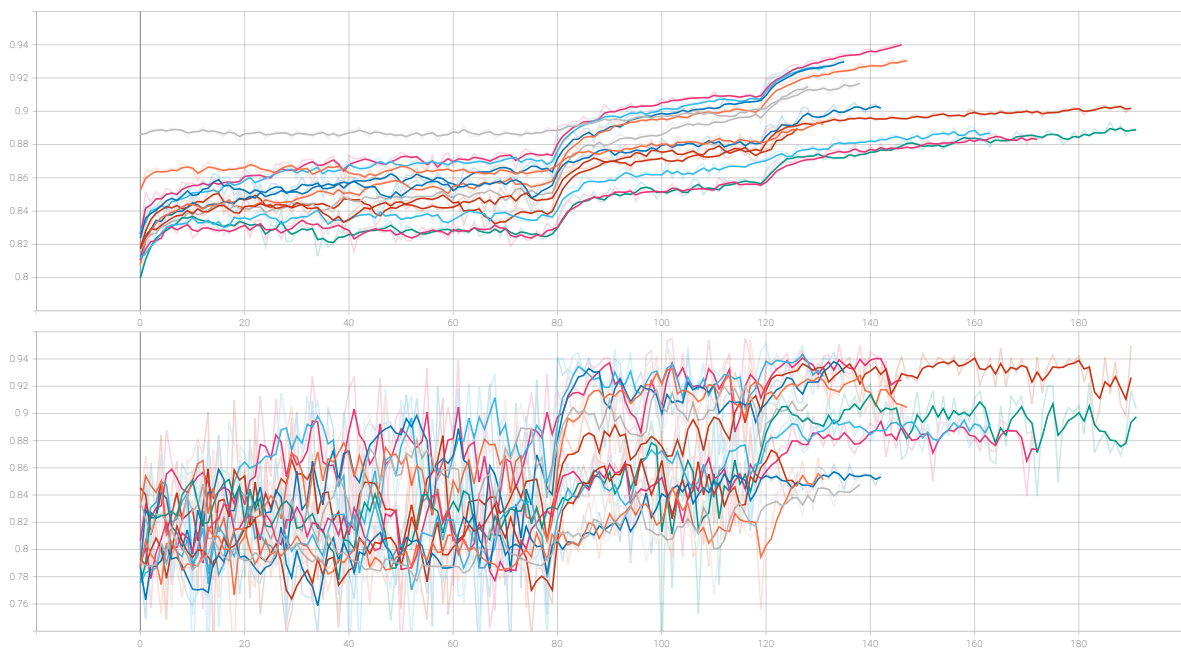


Figure 51: Dice Score for training (top) and validation (bottom) for the no SSL strategy with least confidence AL selection.

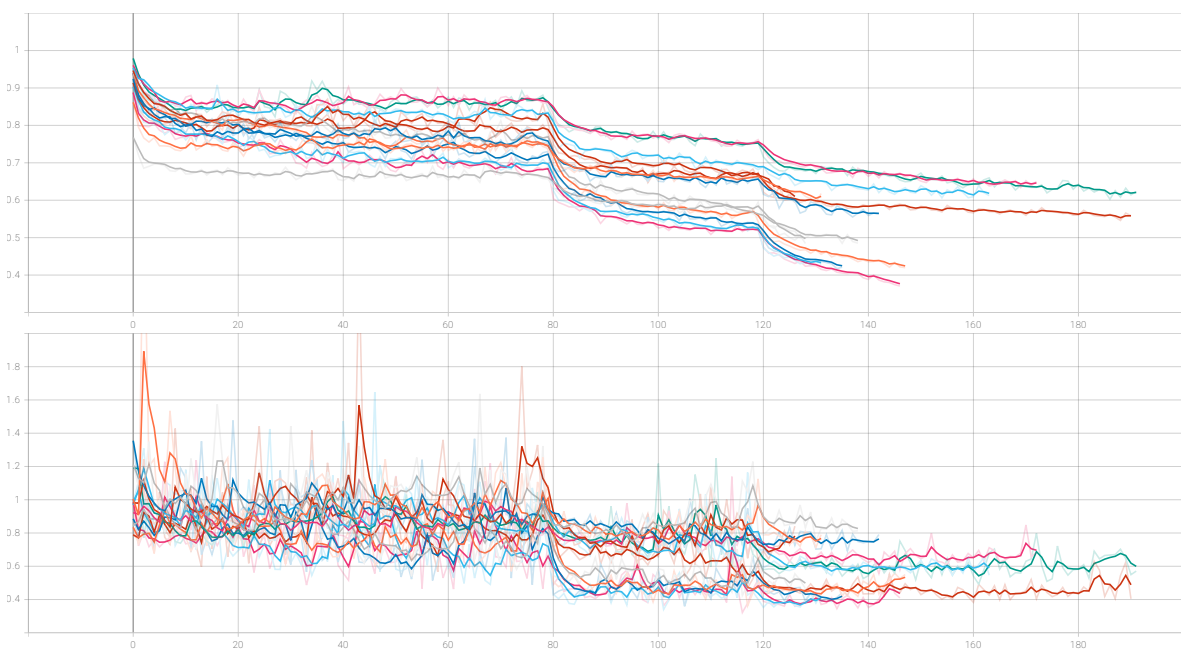


Figure 52: Loss for training (top) and validation (bottom) for the no SSL strategy with least confidence AL selection.

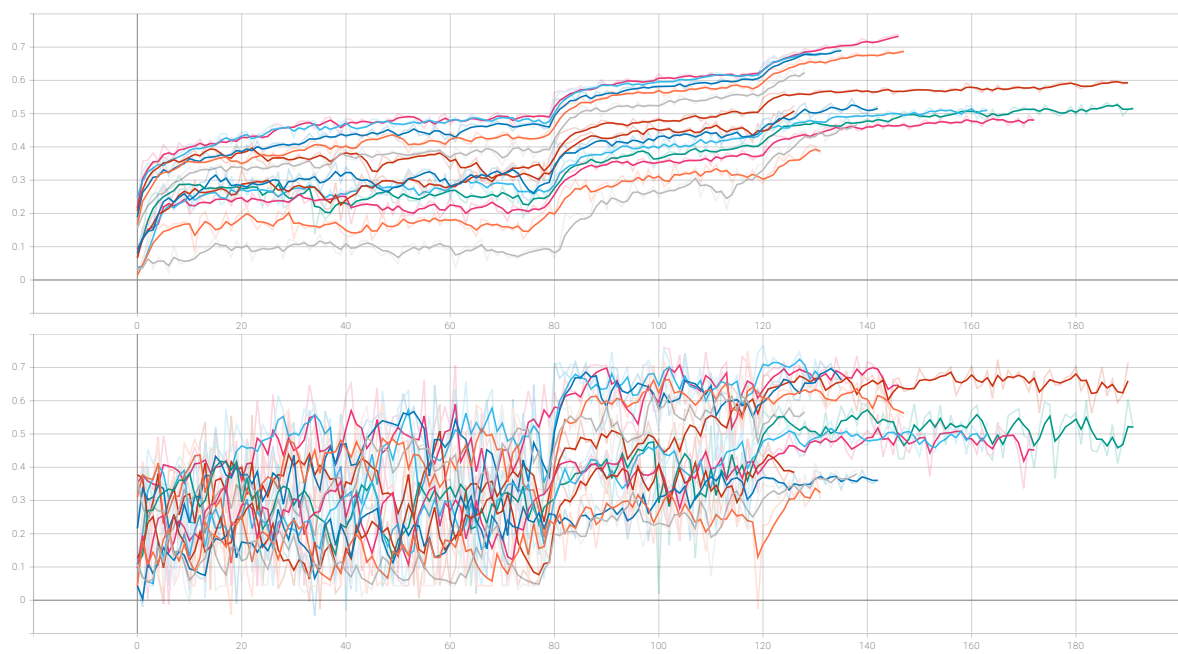


Figure 53: Matthews Correlation Coefficient (MCC) for training (top) and validation (bottom) for the no SSL strategy with least confidence AL selection.

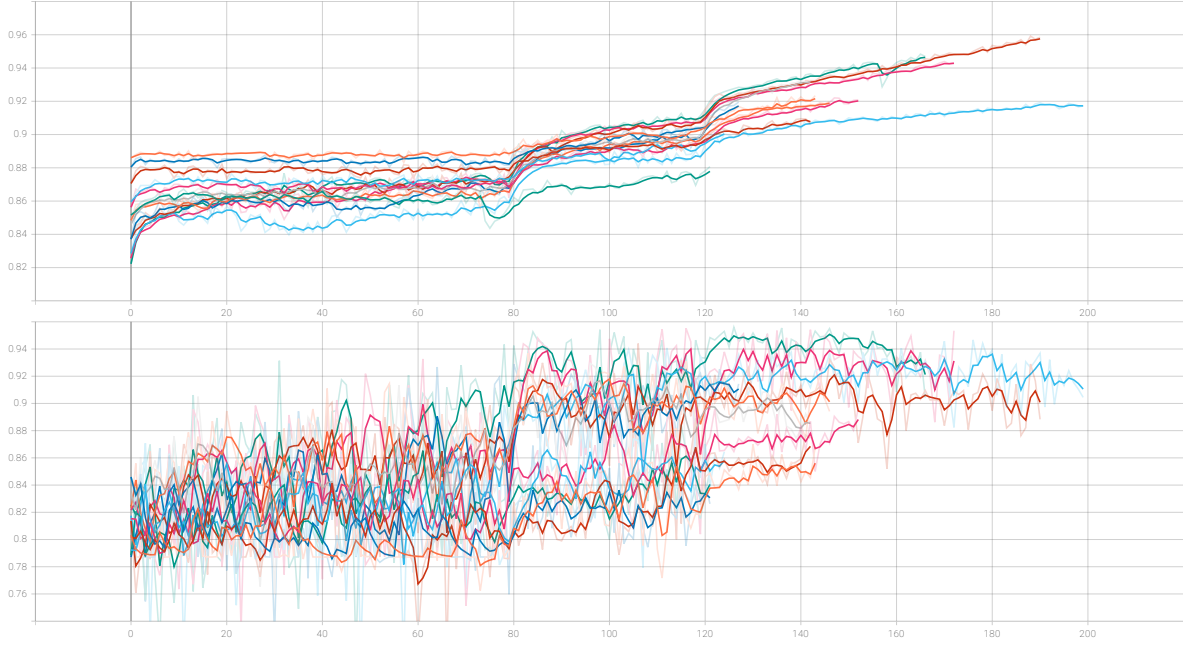


Figure 54: Dice Score for training (top) and validation (bottom) for the no SSL strategy with consistency-based AL selection.

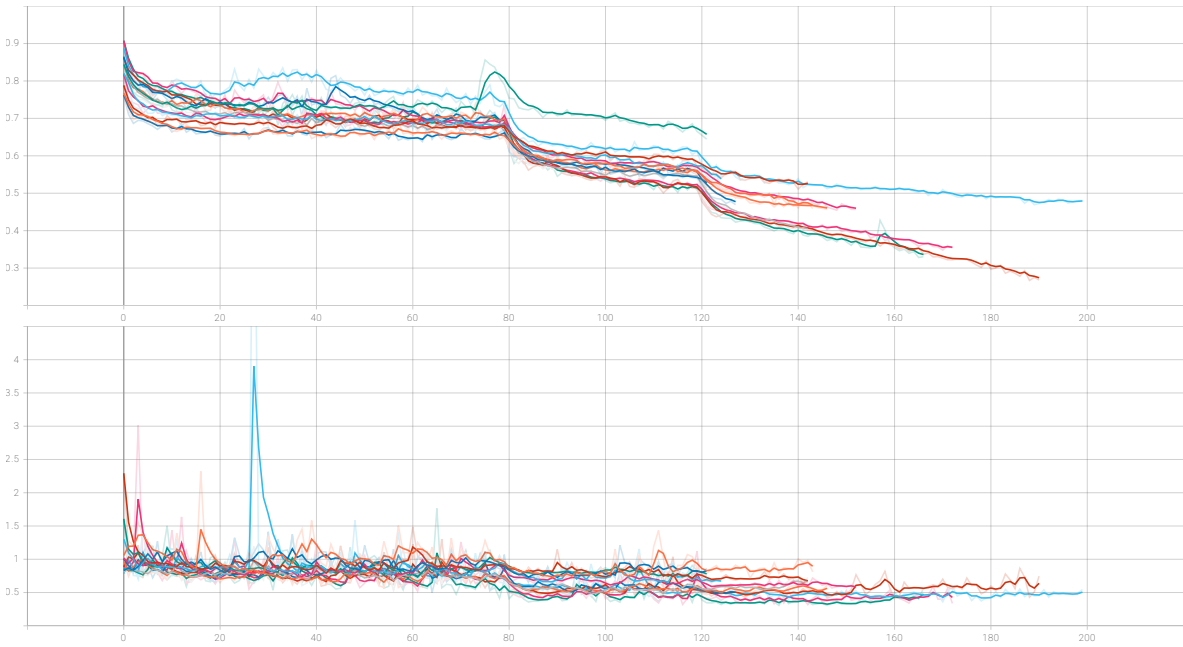


Figure 55: Loss for training (top) and validation (bottom) for the no SSL strategy with consistency-based AL selection.

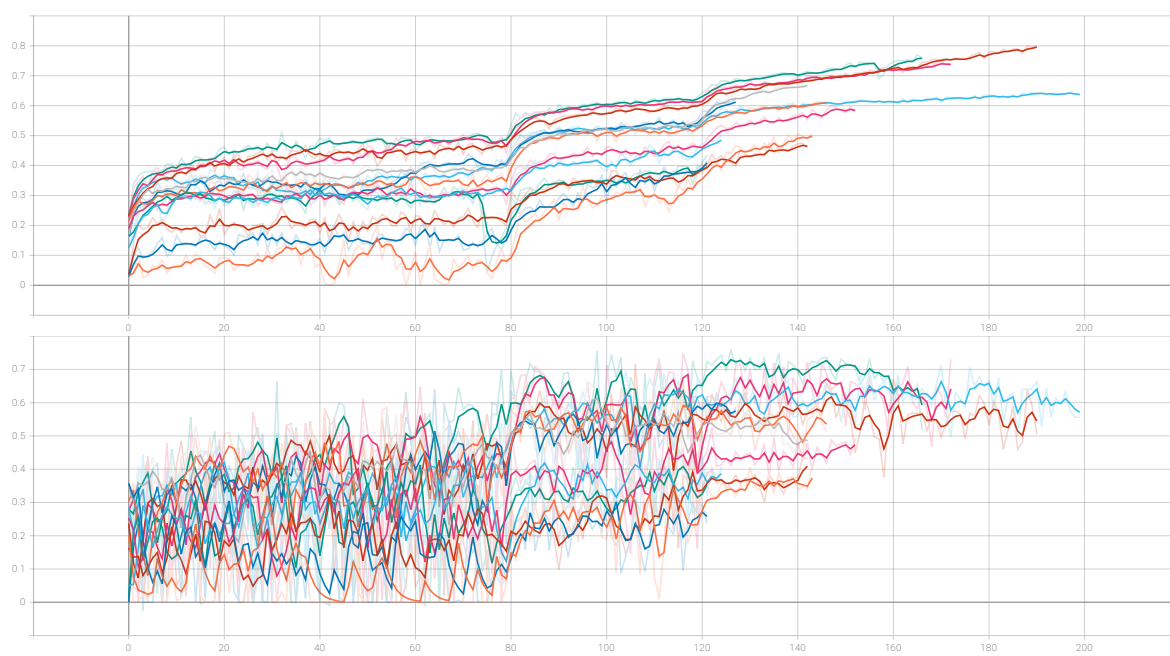


Figure 56: Matthews Correlation Coefficient (MCC) for training (top) and validation (bottom) for the no SSL strategy with consistency-based AL selection.

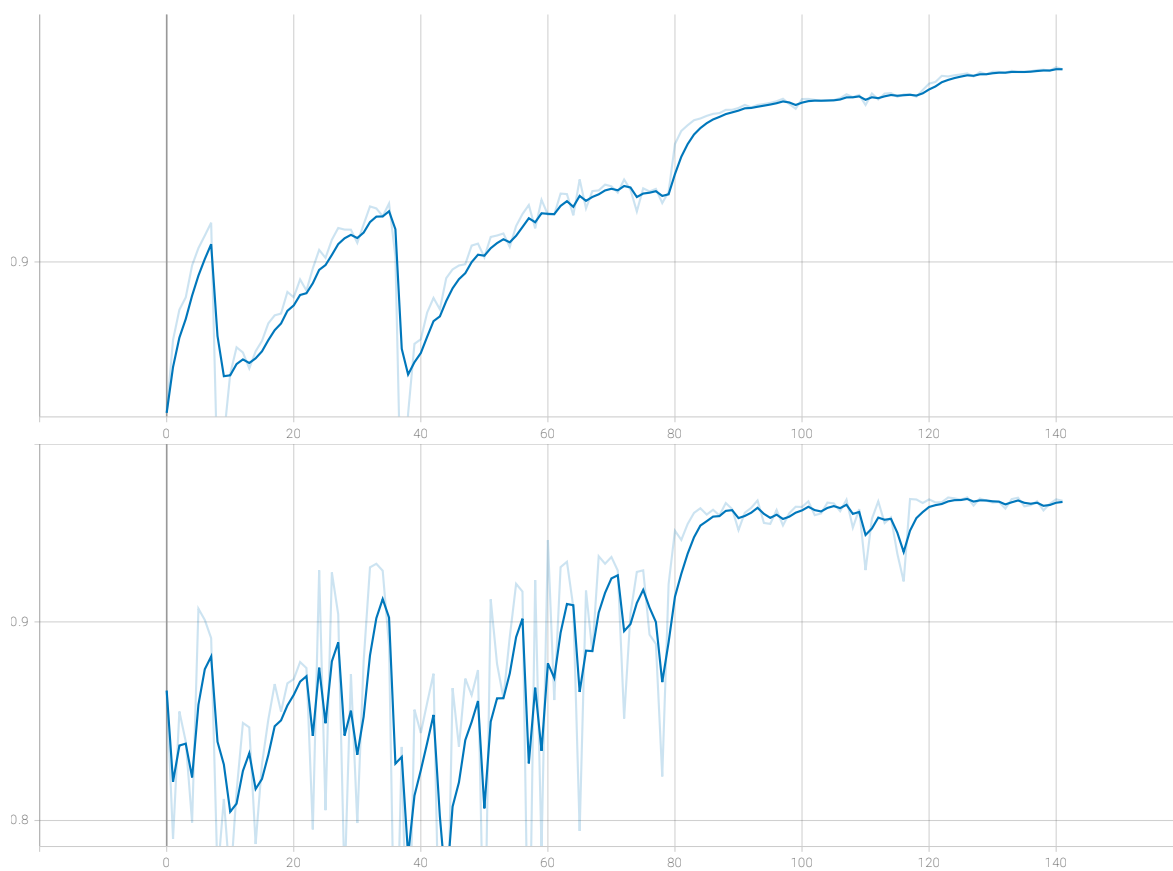


Figure 57: Dice Score for training (top) and validation (bottom) on the fully annotated dataset.

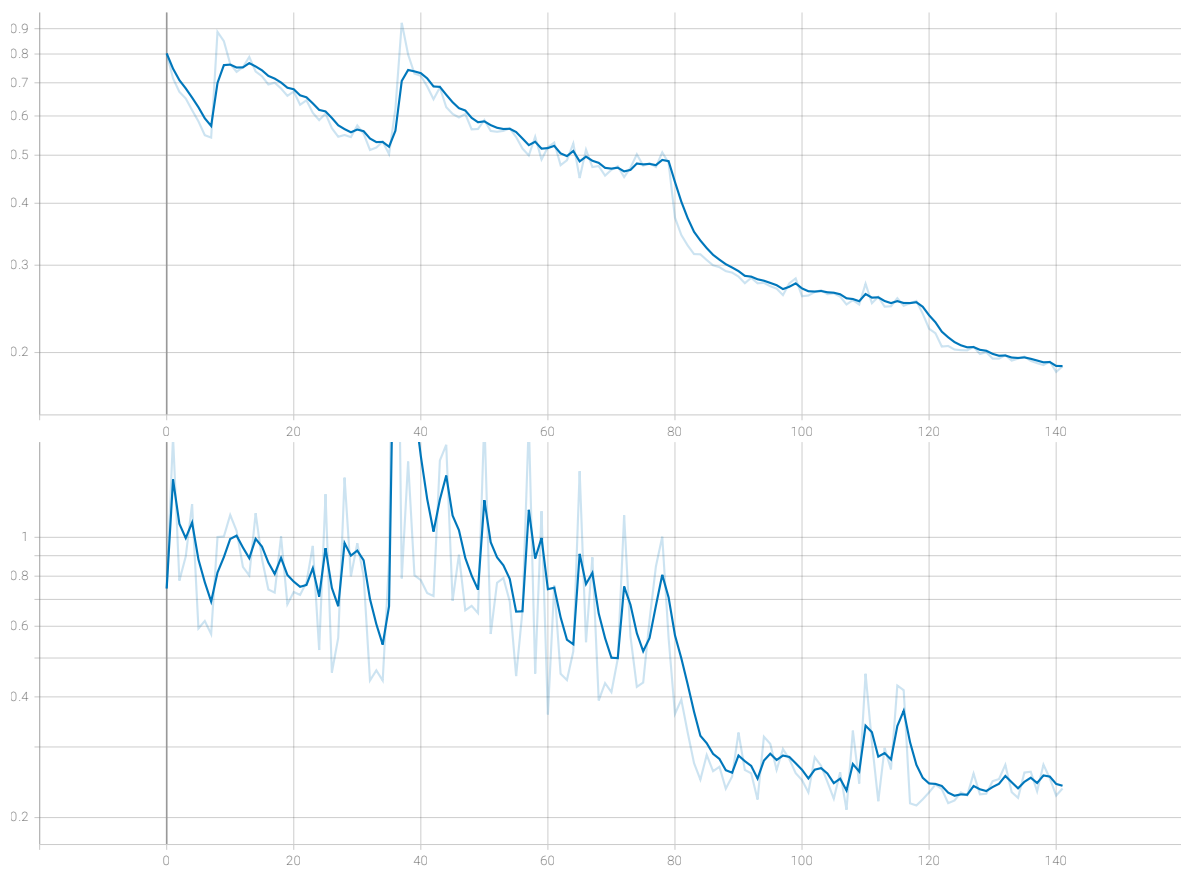


Figure 58: Loss for training (top) and validation (bottom) for the on the fully annotated dataset.

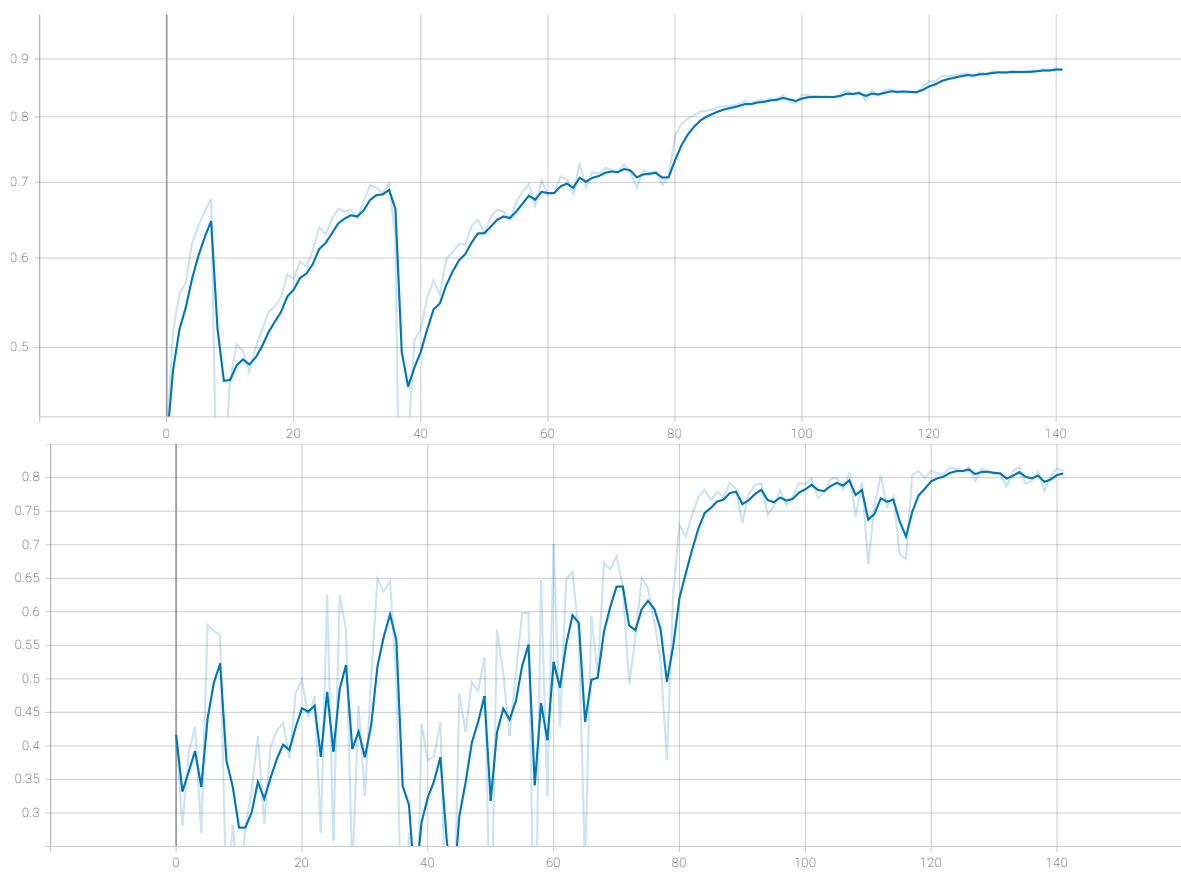


Figure 59: Matthews Correlation Coefficient (MCC) for training (top) and validation (bottom) on the fully annotated dataset.

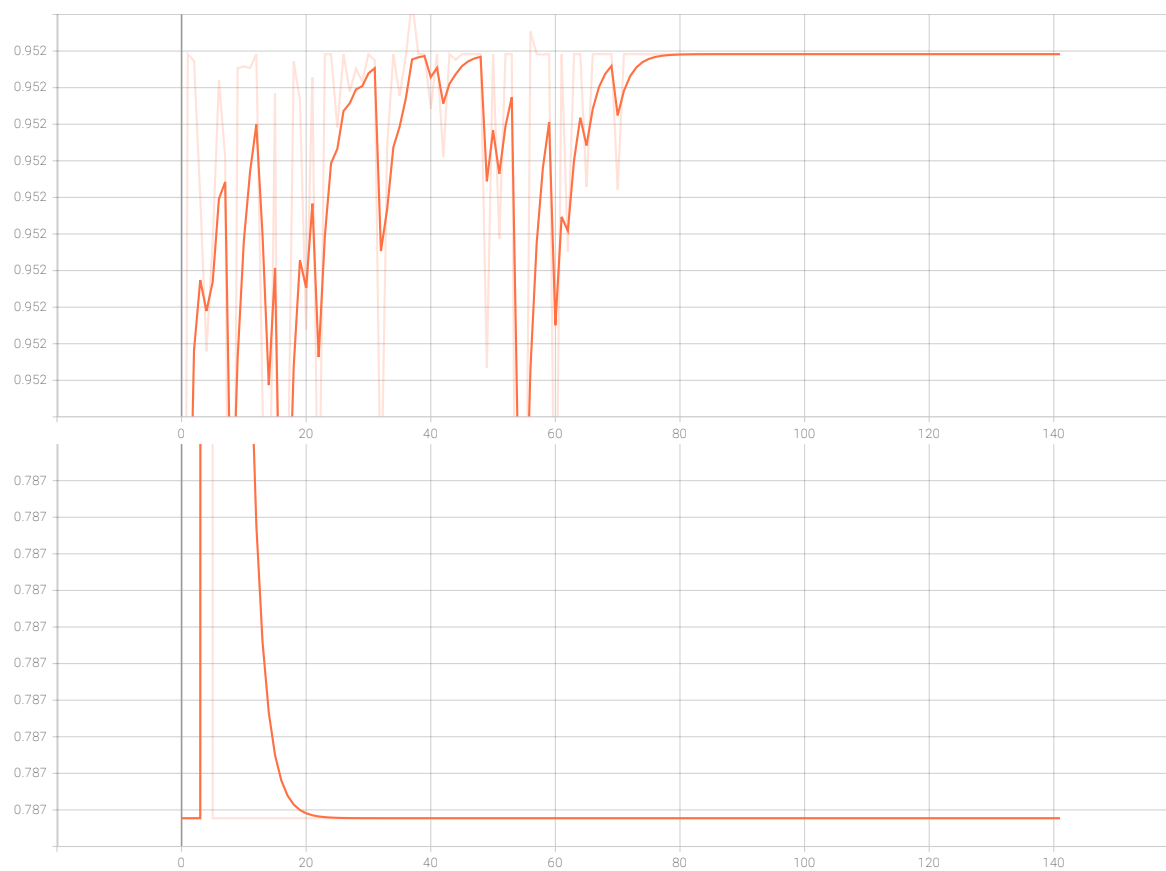


Figure 60: Dice Score for training (top) and validation (bottom) for the supervised learning on the partially annotated dataset.



Figure 61: Loss for training (top) and validation (bottom) for the supervised learning on the partially annotated dataset.

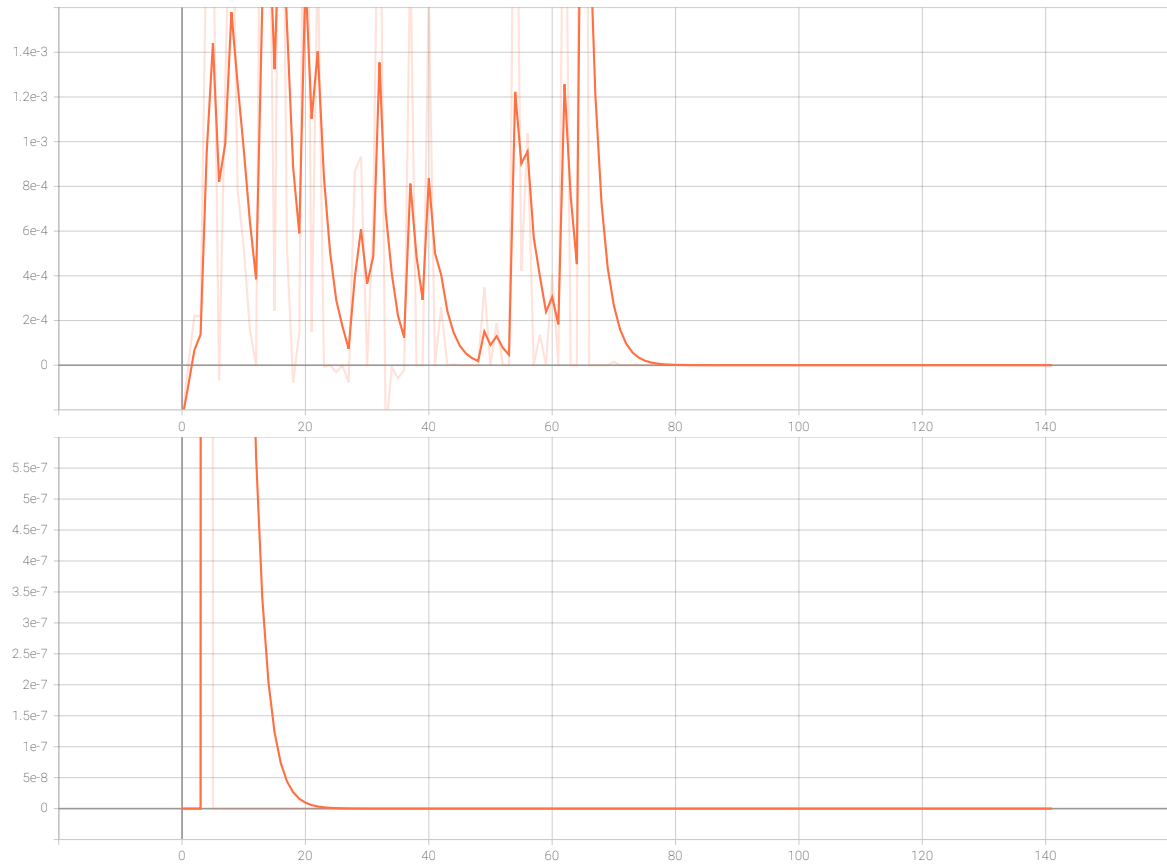


Figure 62: Matthews Correlation Coefficient (MCC) for training (top) and validation (bottom) for the supervised learning on the partially annotated dataset.