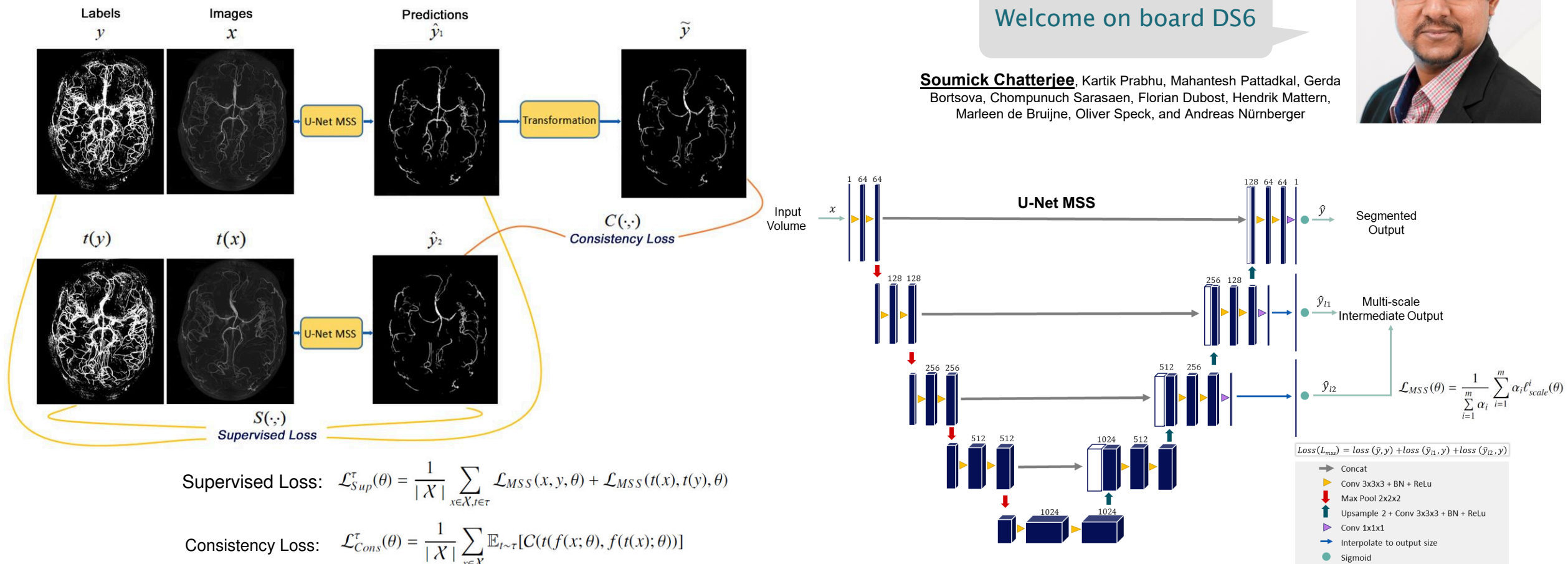


DS6, Deformation-aware Semi-supervised Learning: Application to Small Vessel Segmentation with Noisy Training Data

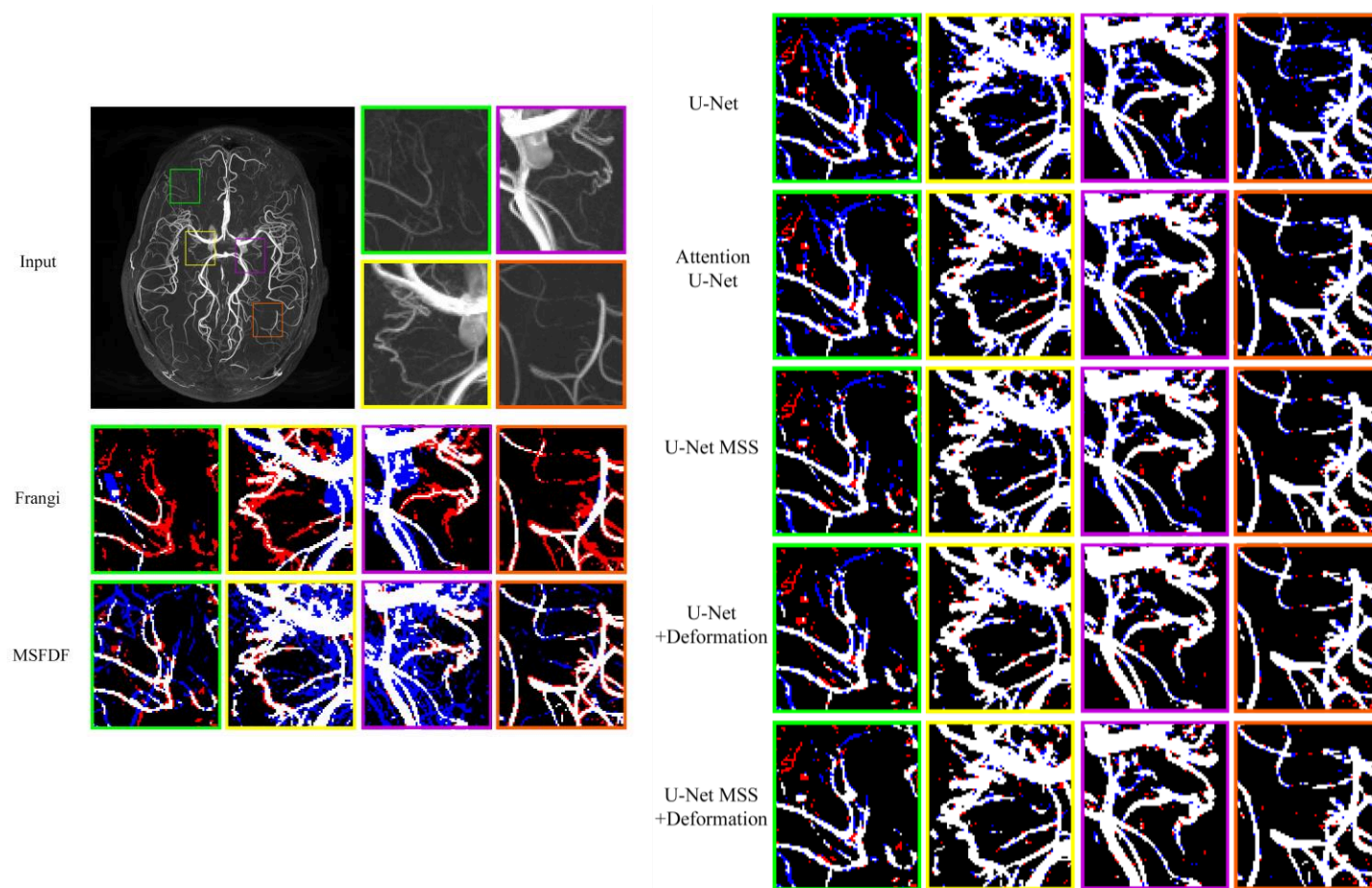
Welcome on board DS6

Soumick Chatterjee, Kartik Prabhu, Mahantesh Pattadkal, Gerda Bortsova, Chompunuch Sarasaen, Florian Dubost, Hendrik Mattern, Marleen de Bruijne, Oliver Speck, and Andreas Nürnberg



Results: Compared against Ilastik Labels

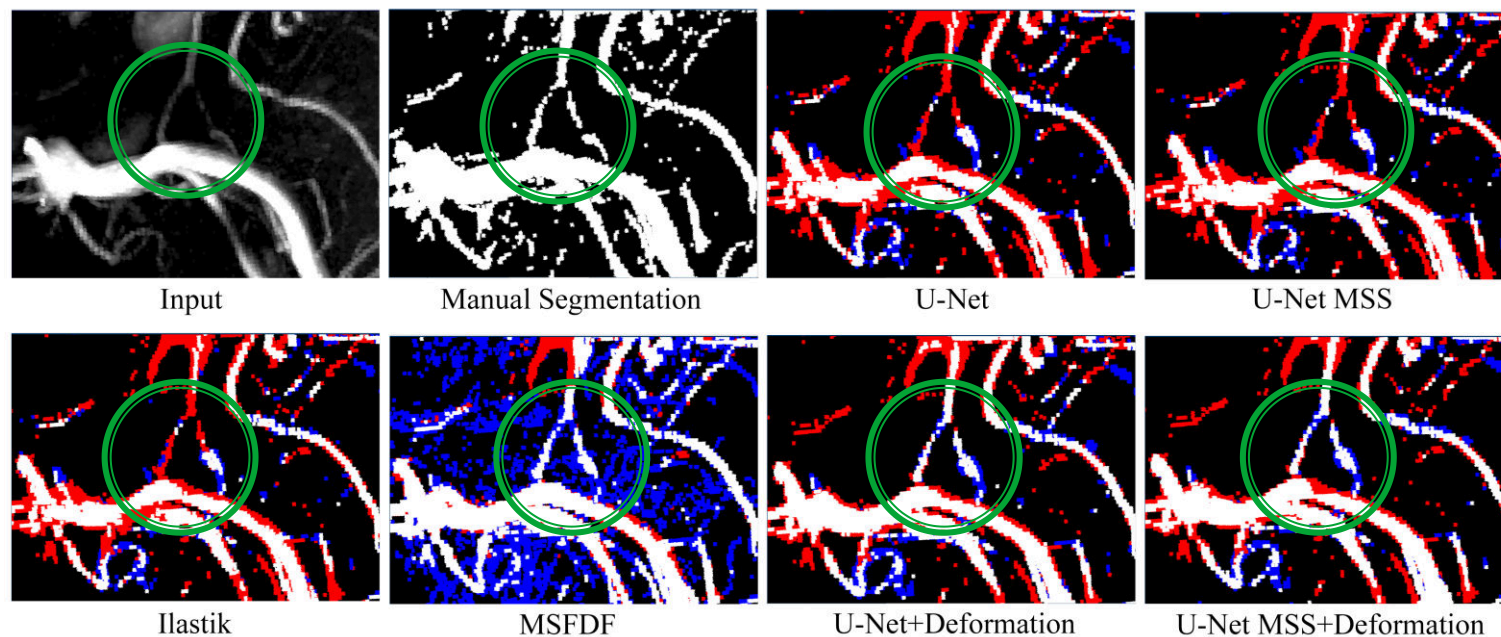
Qualitative & Quantitative Analysis



Type	Method	Dice Coeff.	IoU
Non-DL	Frangi Filter	51.81 ± 3.09	35.00 ± 2.85
Non-DL	MSFDF Pipeline	48.35 ± 6.34	32.04 ± 5.55
DL	Attention U-Net	76.73 ± 0.22	62.25 ± 0.29
DL	U-Net	76.19 ± 0.17	61.54 ± 0.22
DL	U-Net MSS	79.35 ± 0.35	65.81 ± 0.47
DL	U-Net + Deformation	79.44 ± 0.89	65.97 ± 1.23
DL	U-Net MSS + Deformation	80.44 ± 0.83	67.37 ± 1.16

Results

Compared against Manual Segmentation



Type	Method	Dice Coeff.
non-DL	MSFDF	52.39
non-DL	Frangi	57.59
Training Labels	Ilastik	50.21
DL	U-Net	47.45
DL	U-Net MSS	52.17
DL	U-Net + deformation	59.81
DL	U-Net MSS + deformation	62.07