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Guided Proofreading of Automatic Segmentations for Connectomics

Supplemental Material

Anonymous CVPR submission

Paper ID 0947

1. Classifier

1.1. Architecture

We explored different architectures for the convolutional neural network (CNN) for split error detection. In table 1 we compare traditional CNN architectures versus residual networks [?]. The traditional architecture generalized better than residual networks on unseen testing data.

	Traditional Network		Residual Network	
Conv. Layers	2	4	5	13
Dropout Reg.	y	y	y	n
Cost [m]	27.5	383	5080	1094
Test. Acc.	0.925	0.94	0.93	0.90
Prec./Recall	0.93/0.93	0.94/0.94	0.7/0.53	0.74/0.66
F1 Score	0.93	0.94	0.39	0.64
		*		

Table 1: Traditional CNN Architecture versus Residual Network Architecture [?]. All configurations are compared using the same parameters. Our final choice (indicated by *) trains relatively fast and performs better.

1.2. Training Parameters

1.3. Automatic Method Threshold p_t

2. L. Cylinder Results

3. CREMI Results

4. Forced Choice User Experiment

4.1. Recruitment and Participation

flyers, participant list

4.2. Example Classifications

Where did users make a mistake?

4.3. Subjective Responses

NASA TLX ANOVA analysis

References

[1] K. He, X. Zhang, S. Ren, and J. Sun. Deep residual learning for image recognition. In *The IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2016.

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