

# Synapse-Aware Skeleton Generation for Neural Circuits

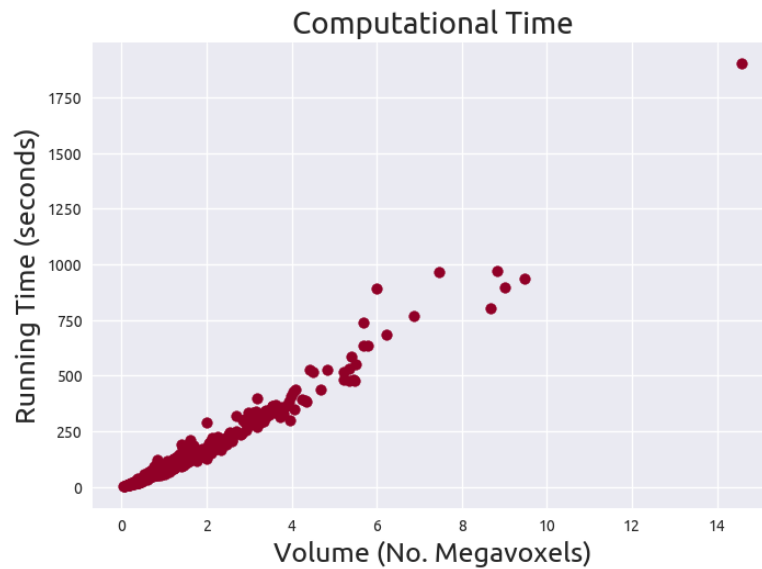
## *Supplementary Material*

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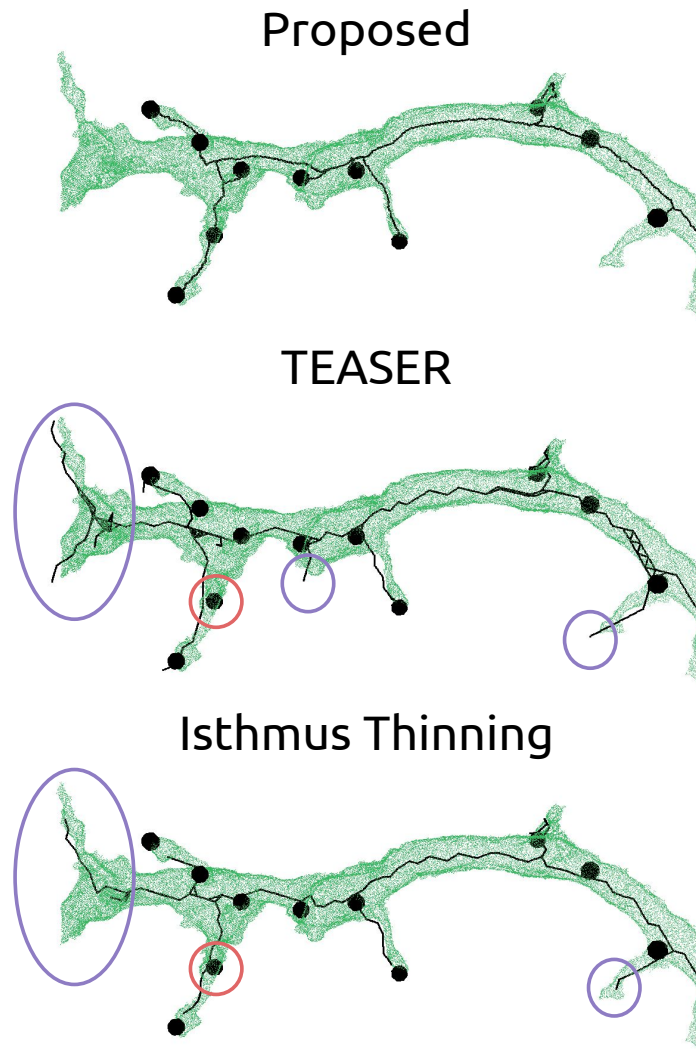
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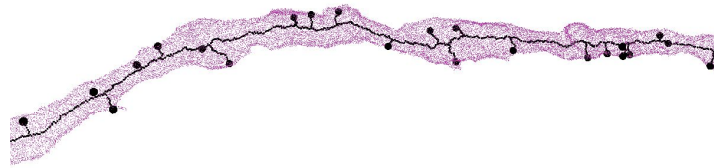


**Fig. 1.** The computational costs for our algorithm empirically follow a linear runtime on the FIB-25 dataset with an average throughput of 111,105 voxels per second.

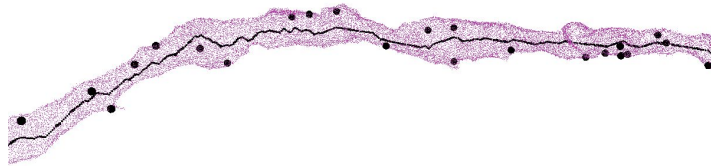


**Fig. 2.** Here is a side-by-side comparison of our proposed method compared to our two baselines on a neuron fragment from the FIB-25 dataset. Our method guarantees endpoints only at synapse locations. The TEASER and isthmus thinning methods introduce new endpoints (purple circles) and miss others (red circles).

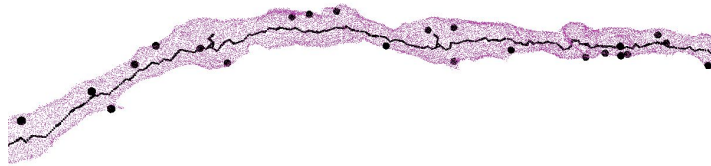
Proposed



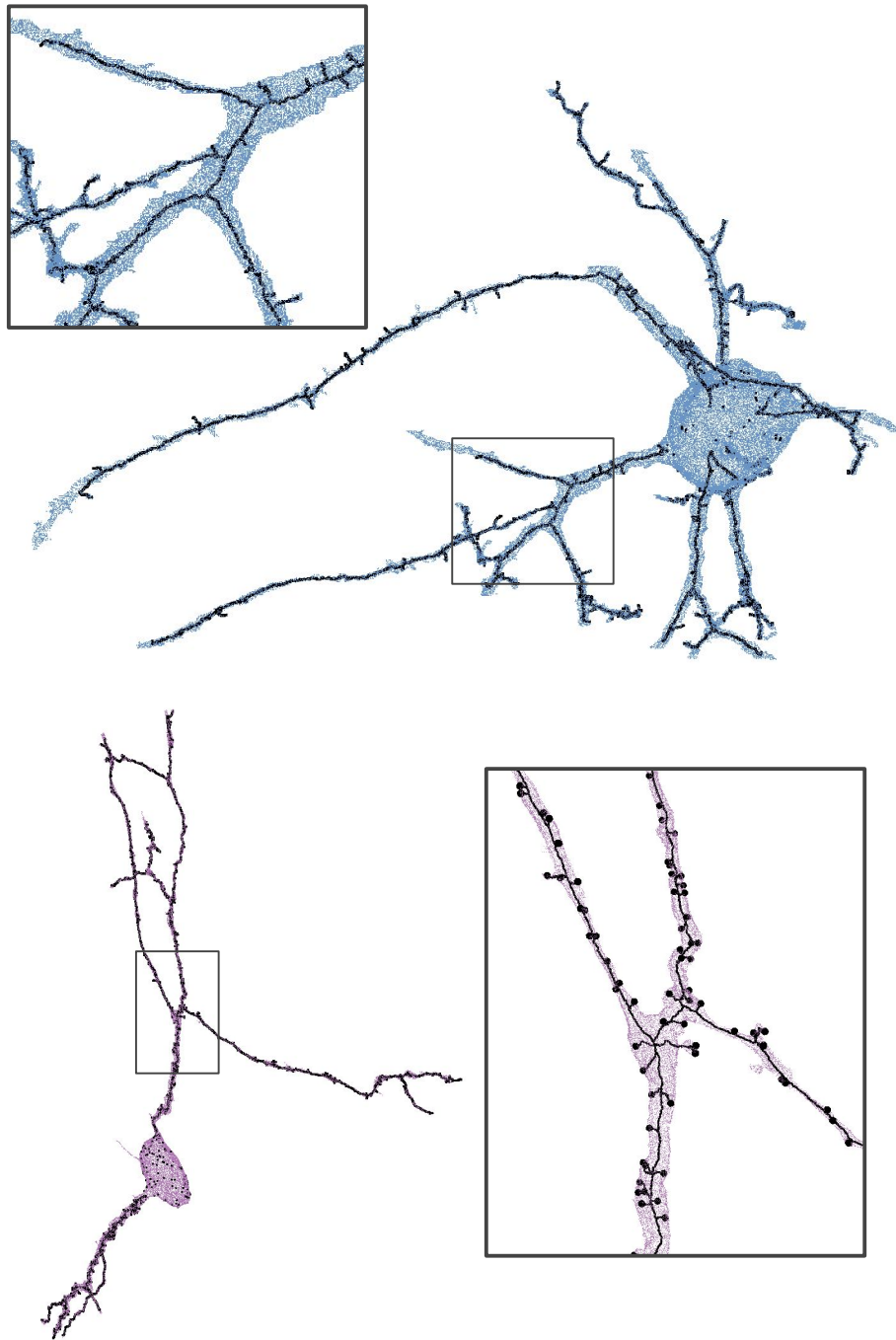
TEASER



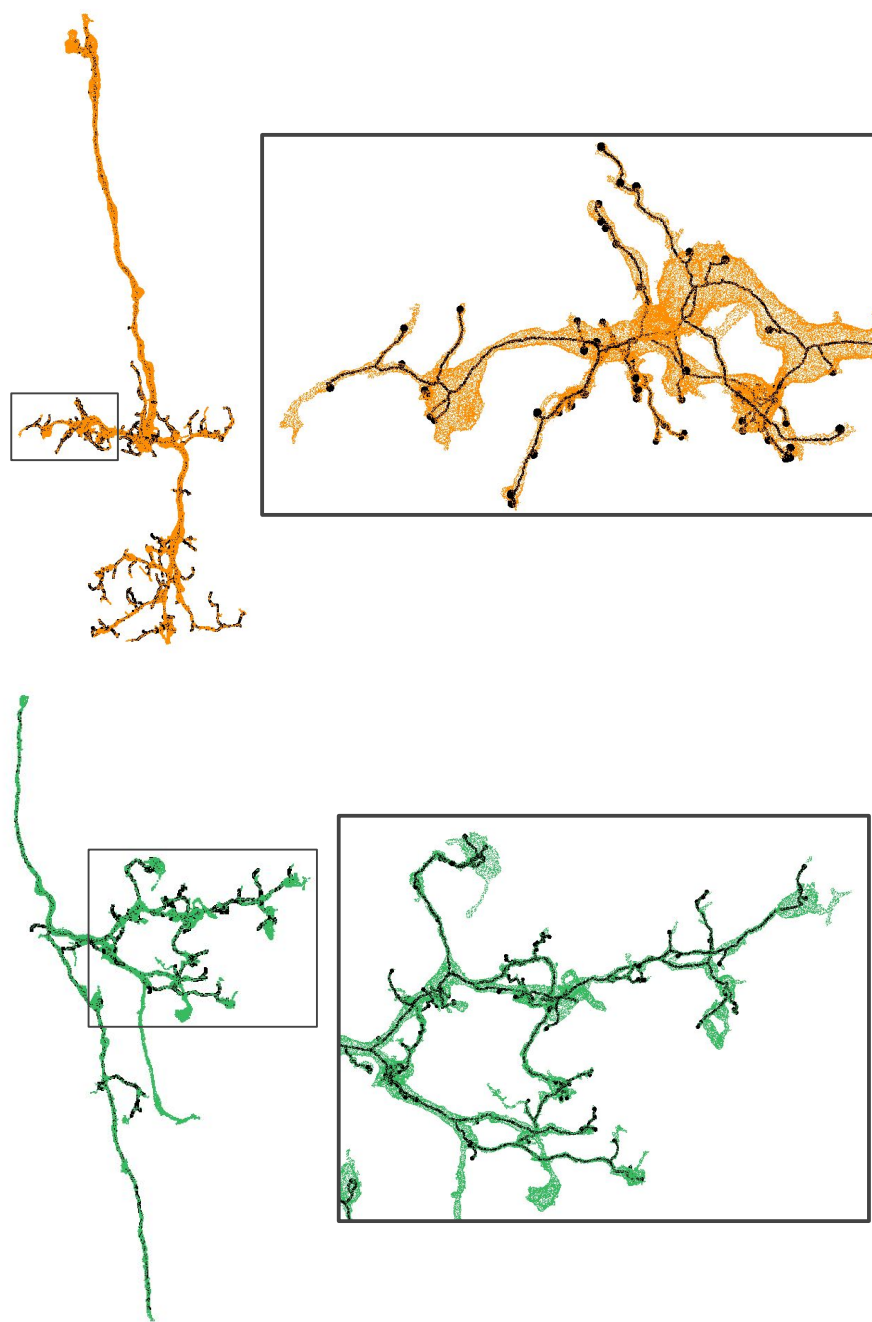
Isthmus Thinning



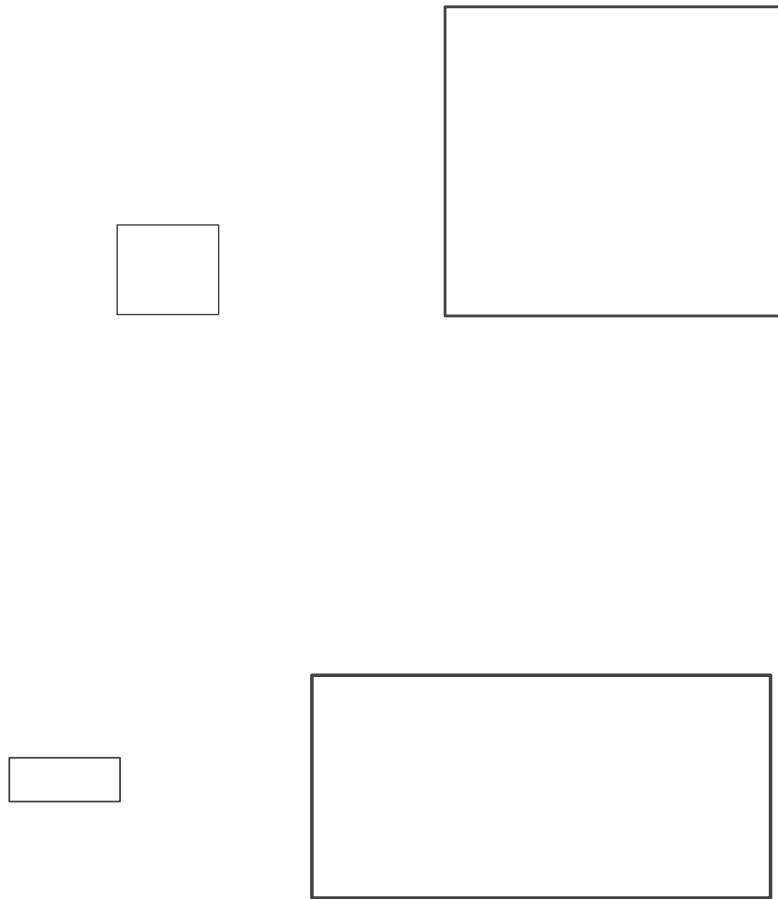
**Fig. 3.** The two baseline strategies fail to connect any of the synapses to the skeleton in this segment from JWR. Under the proposed strategy, there is a path between each synapse and the center-line.



**Fig. 4.** Two additional examples from the JWR dataset (rat). For both neurons, we also zoom in to one location to show the finer details.



**Fig. 5.** Two additional examples from the FIB-25 dataset (fruit fly). For both neurons, we also zoom in to one location to show the finer details.



**Fig. 6.** Two additional examples from the J0126 dataset (zebrafinch). For both neurons, we also zoom in to one location to show the finer details.