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ARCTIQUE

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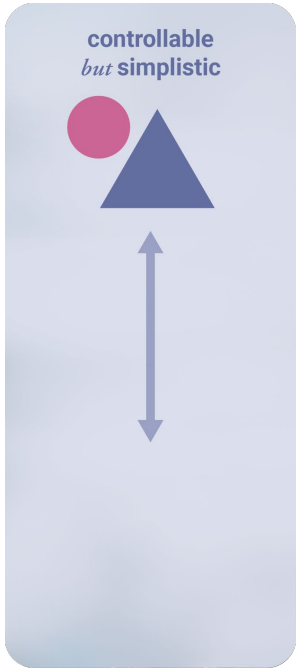

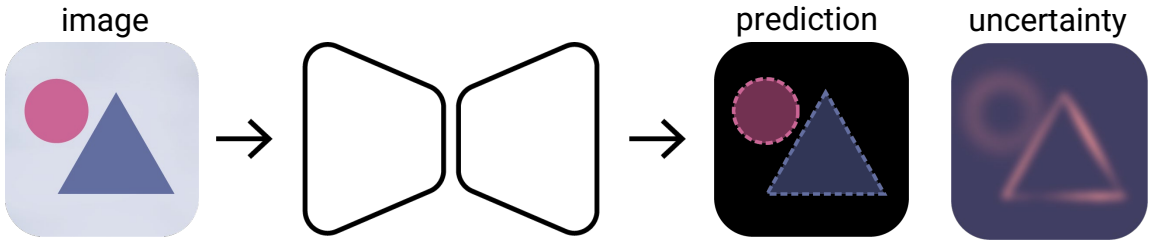

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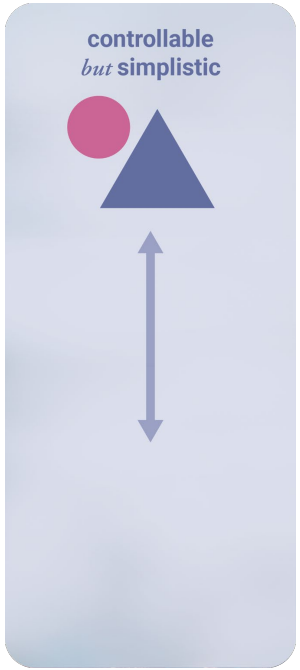

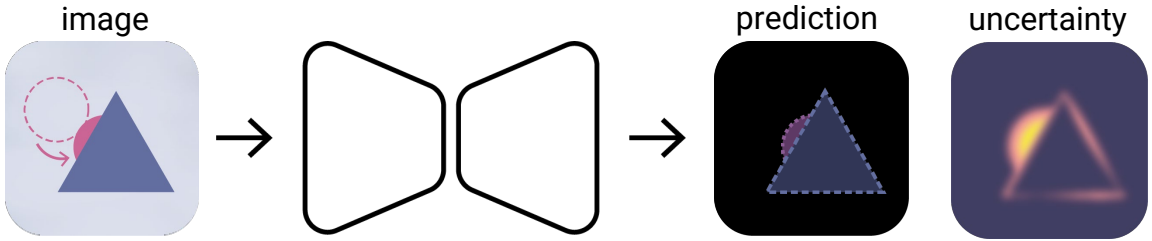

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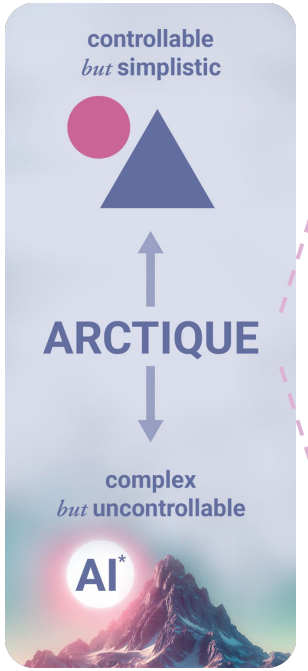

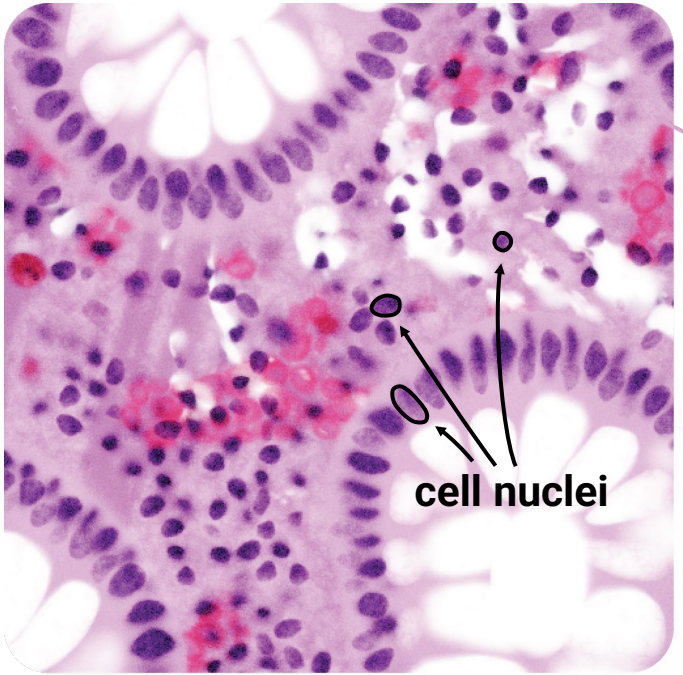

tissue structure

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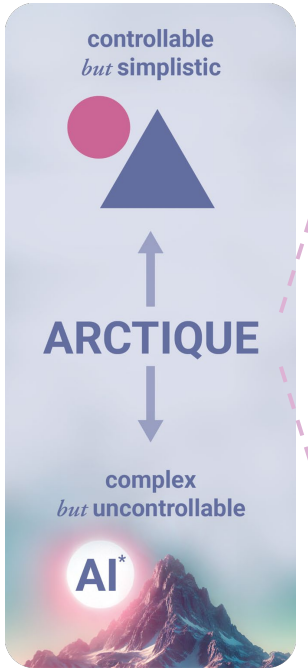
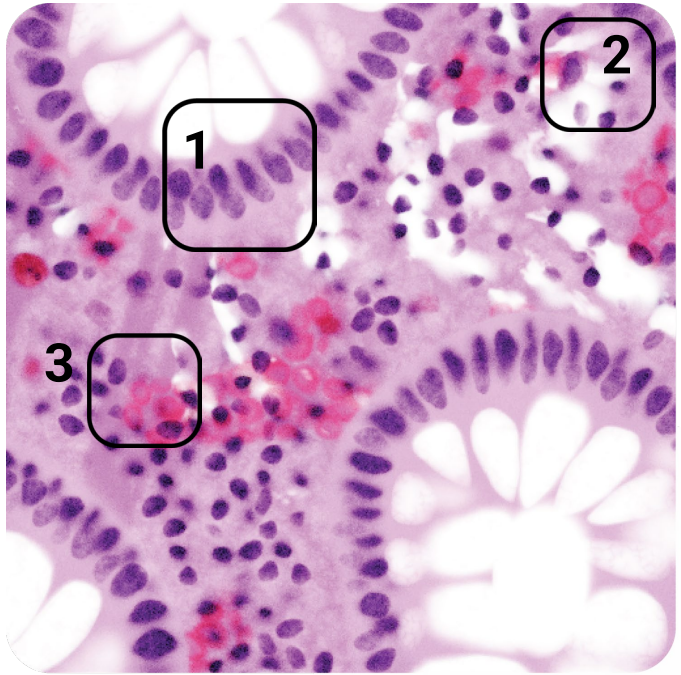
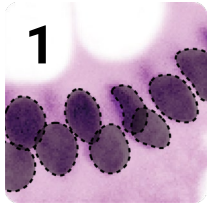
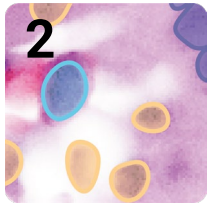


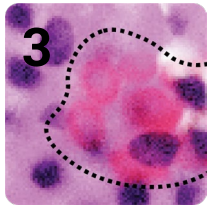




Segmentation of overlapping elements



Different cell types



Perturbing elements e.g. blood cells

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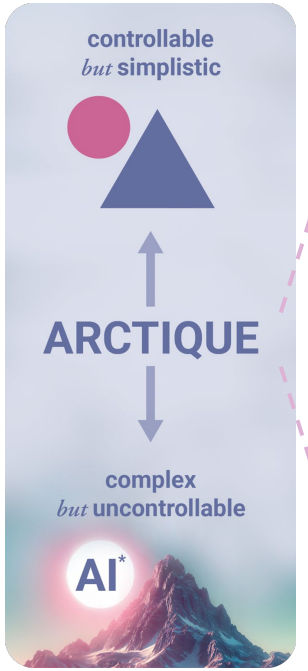

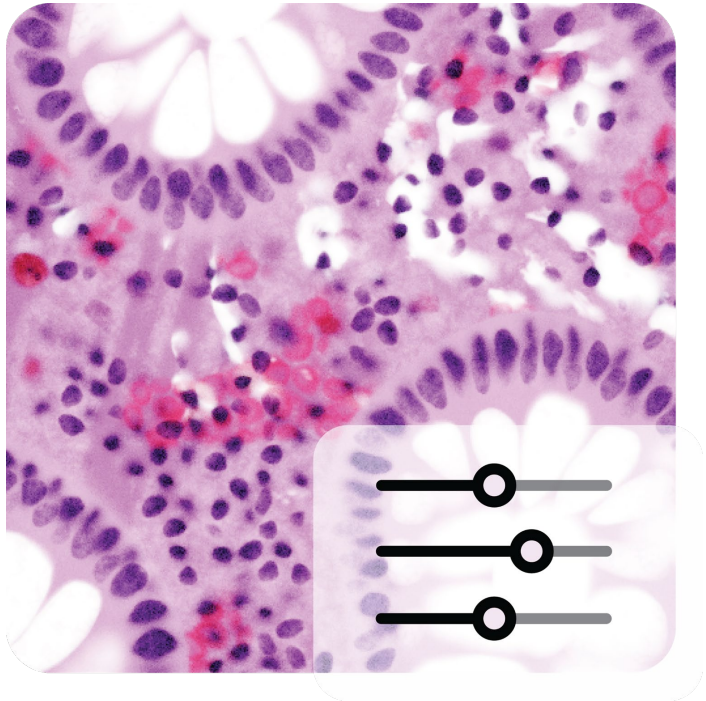

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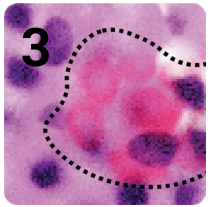

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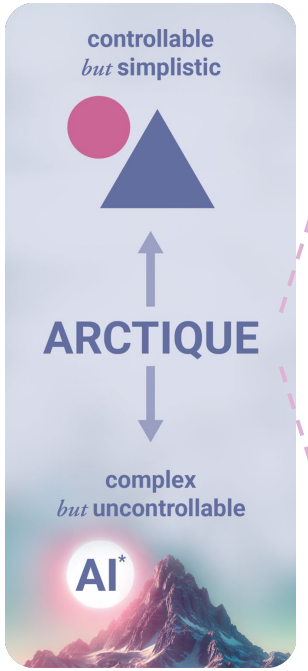

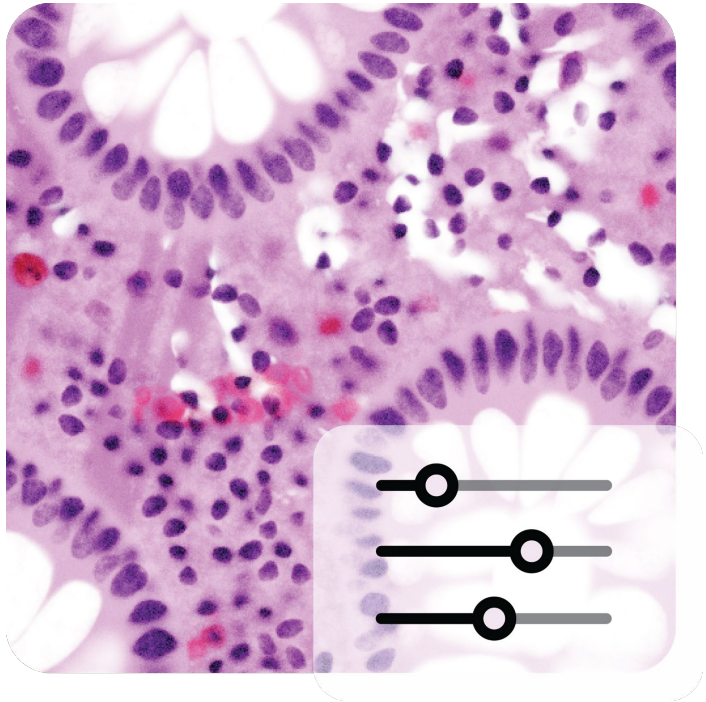

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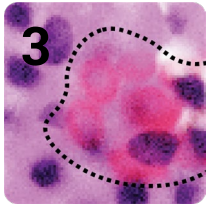

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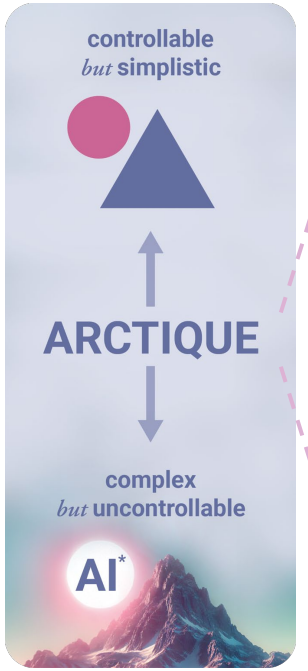

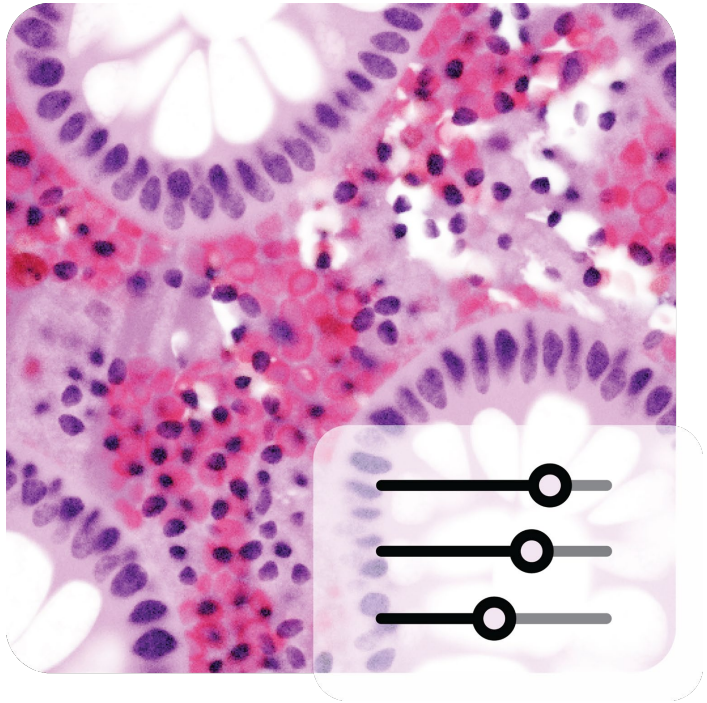

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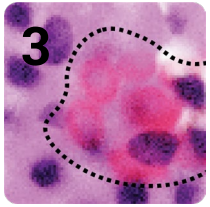

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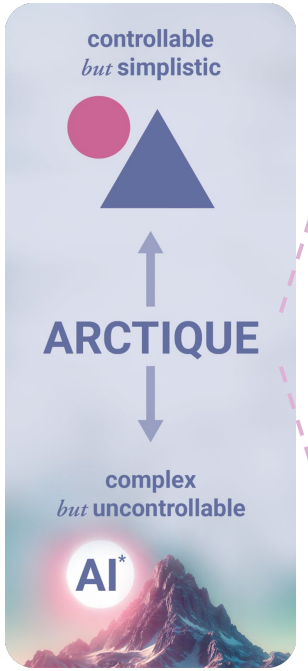

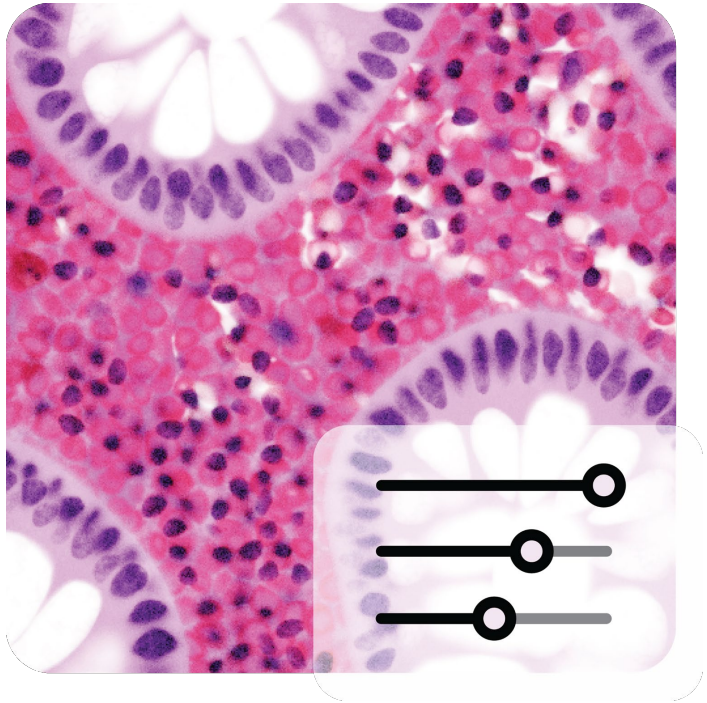

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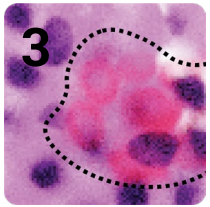

Perturbing elements e.g. blood cells

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3D Tissue

Generation workflow

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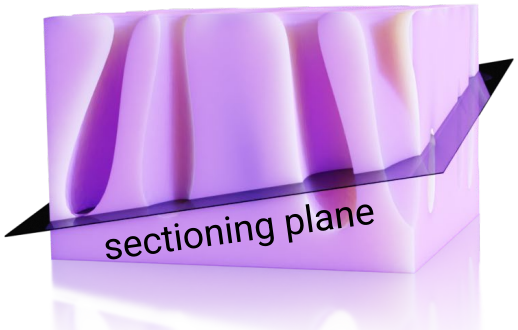

Generation workflow

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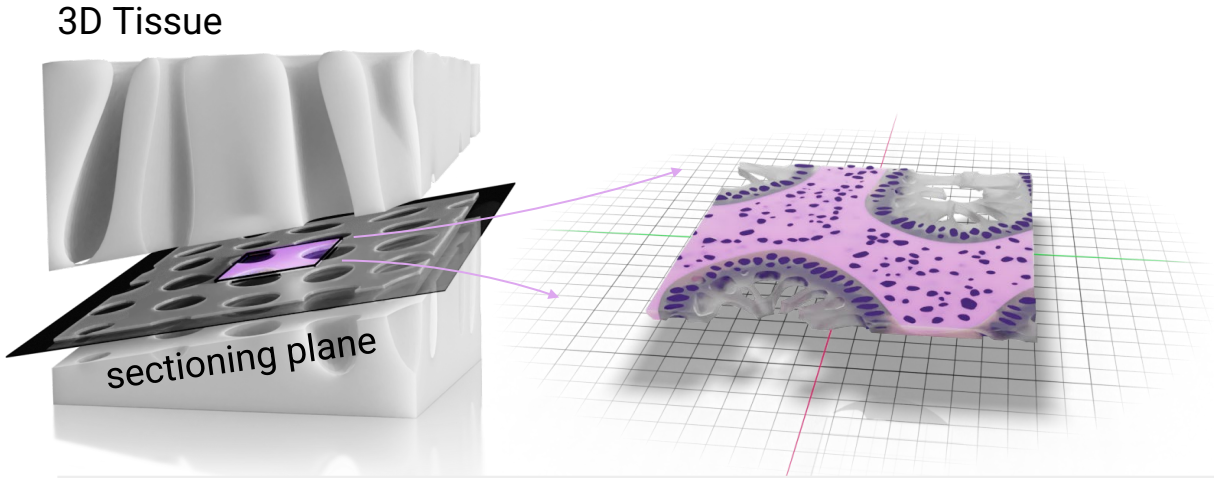

Generation workflow

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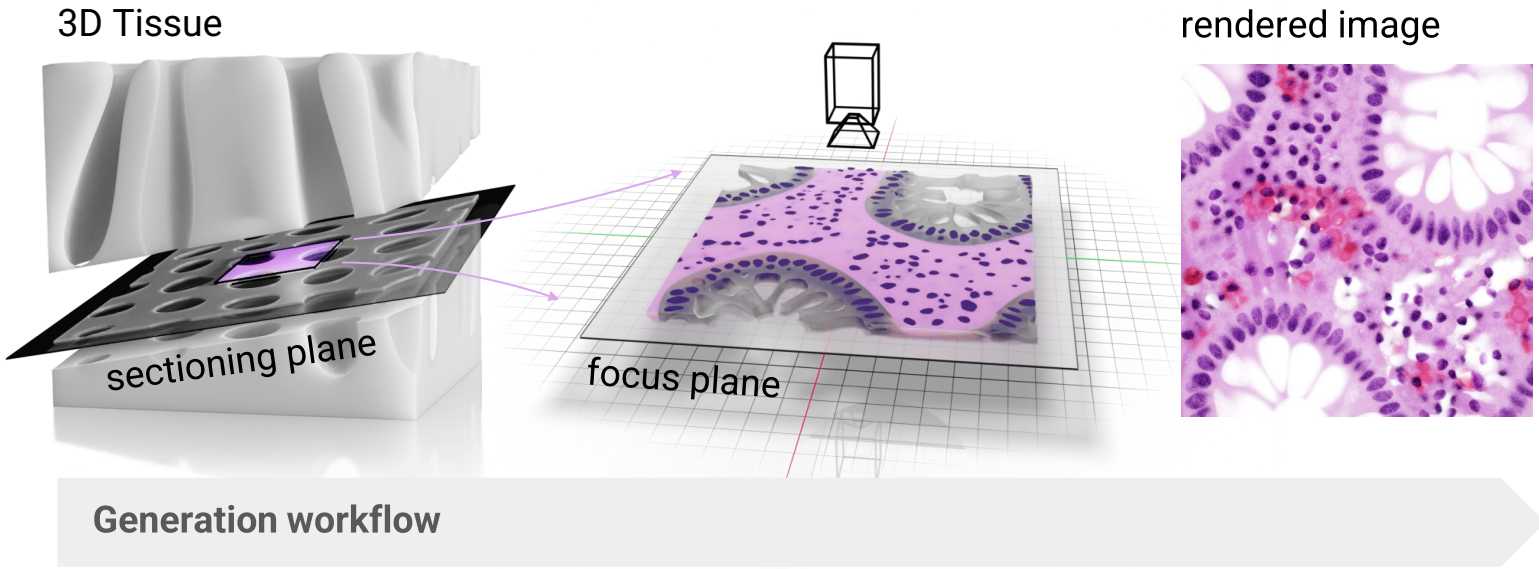

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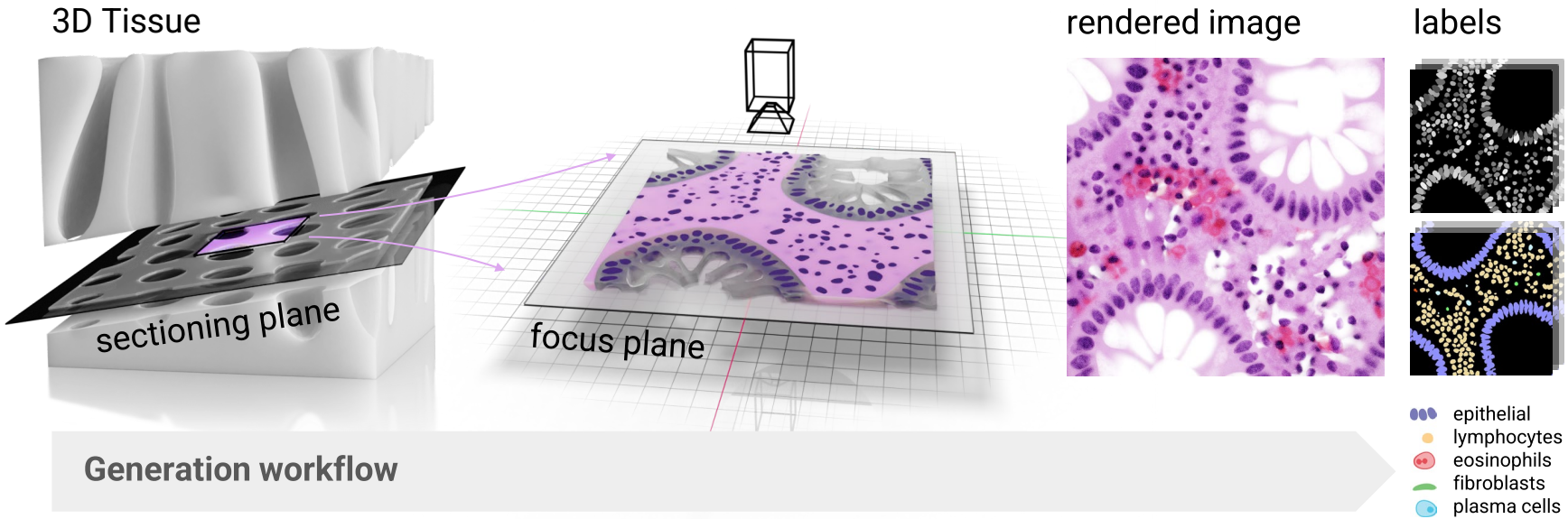

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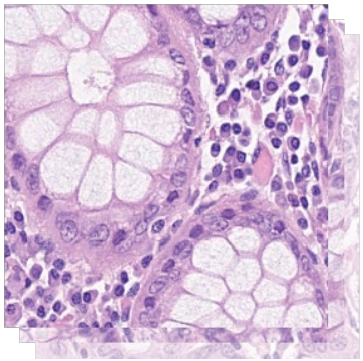
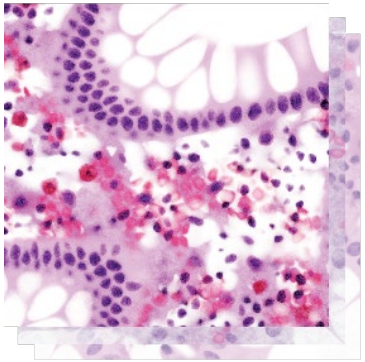
real data [1]



noisy ARCTIQUE



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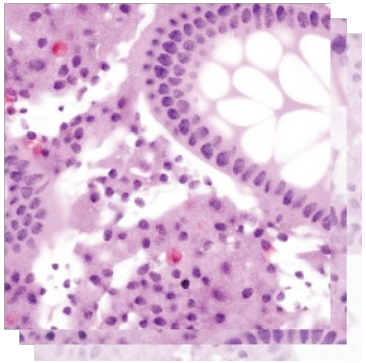
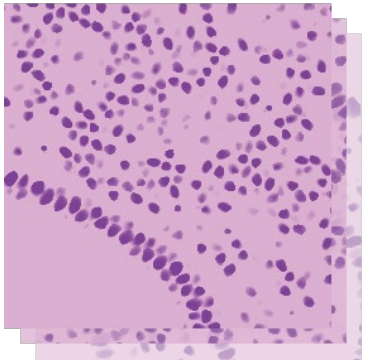


depth mask



[1] Graham et al. “Lizard: a large-scale dataset for colonic nuclear instance segmentation and classification”, 2021

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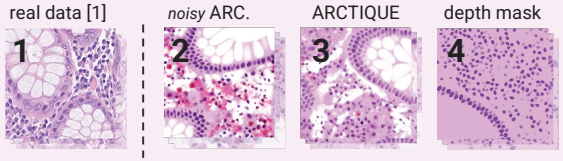
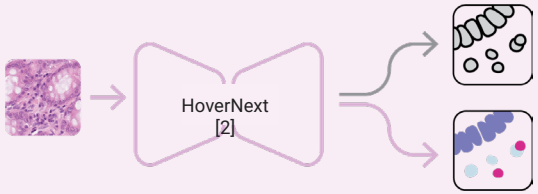
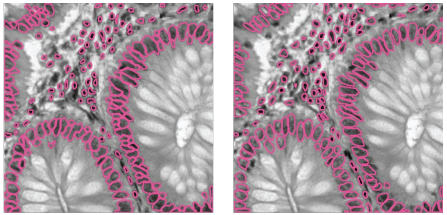
Training on

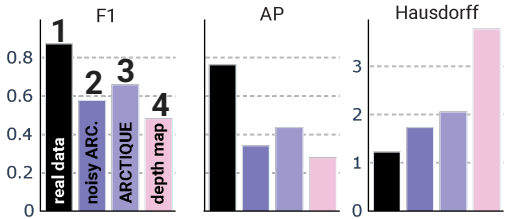


Inference on real data

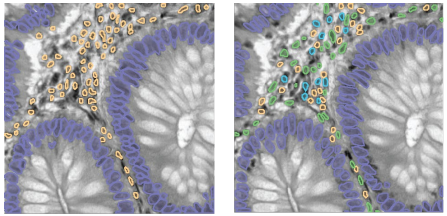


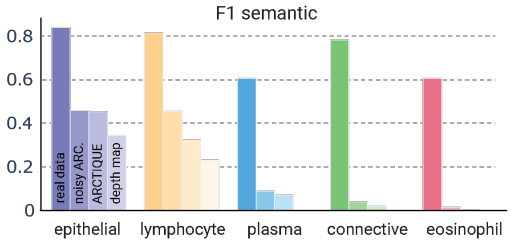
Instance Segmentation





Semantic Segmentation





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[2] Baumann et al. “HoVer-NeXt: A Fast Nuclei Segmentation and Classification Pipeline for Next Generation Histopathology”, 2024

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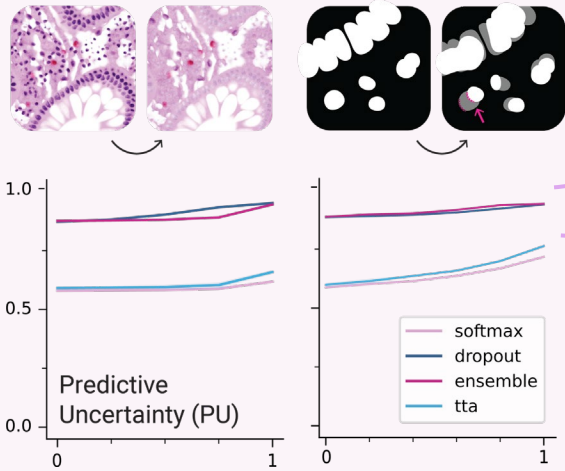
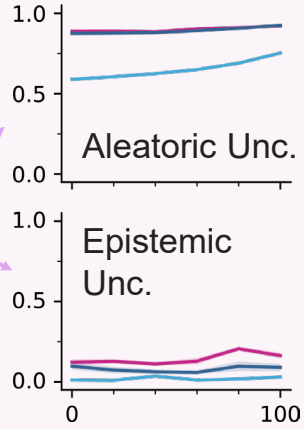
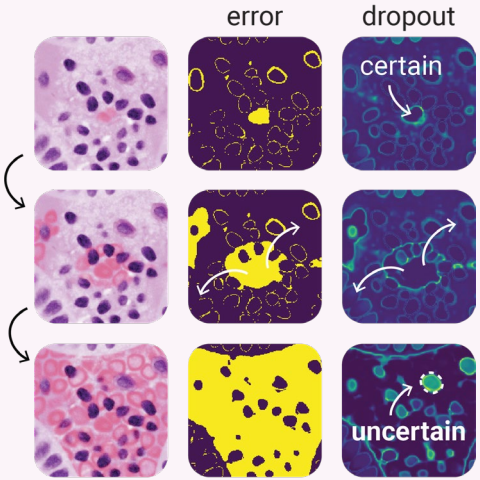


Response of uncertainty quantification methods to gradual changes in images and labels



Separate manipulation of images and labels to study **decomposition into aleatoric and epistemic** components



Exact labels for **qualitative assessment** via error maps and **uncertainty maps**

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