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Supplementary Materials in Chapter 5

As an extra, we have added two zoomed-in samples to highlight the details of our method and other approaches. The first row of Figure A.1 shows that our method can correctly divide two glomeruli without overlap. Cascade Mask R-CNN and Mask R-CNN, however, generate multiple responses at the border of two objects. QueryInst with static queries cannot detect or segment any glomerulus. The last row of Figure A.1 demonstrates four large arteries in a line. It is complicated because two large arteries pass over most of the input image regions. Although it had multiple responses at the artery border, our method can capture long-range spatial dependencies for large objects using attention mechanisms with dynamic queries. In contrast, Cascade Mask RCNN and Mask RCNN cannot model large objects without attention modules. QueryInst uses a static attention mechanism and cannot handle complex combinations of shapes and appearances with a fixed number of queries.

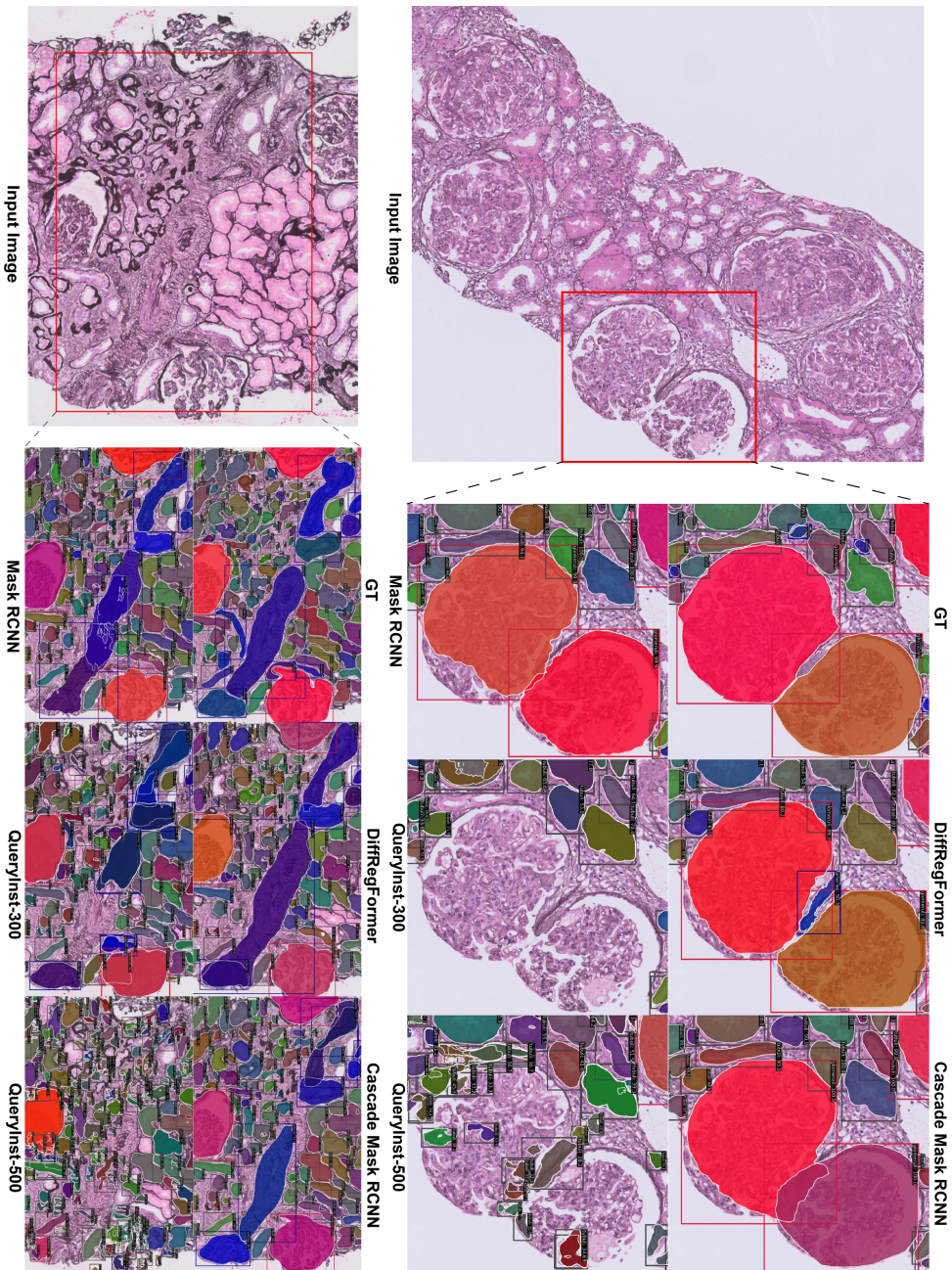


Figure A.1: Detailed zoom-in samples comparing DiffRegFormer with other methods.