

A Study on Medical Image Segmentation Using Deep Learning: Minimal Before/After Conversion Example

First Author, Second Author, and Third Author

Abstract—This manuscript demonstrates the same content as the one-column draft, now converted into safe IEEEtran journal two-column patterns. Compare each float and the author block against the before/minimal.tex counterpart to see every fix in context.

Index Terms—IEEEtran, journal submission, two-column conversion, float placement.

I. INTRODUCTION

Two-column IEEE journal submissions require float environments that match the target column width and author blocks that follow journal conventions. Fig. 1 shows the proposed system overview. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetur id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

II. RELATED WORK

Prior work on this topic spans multiple sub-fields. We briefly review the most relevant approaches. Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

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III. METHODOLOGY

The combined loss function is defined as

$$\mathcal{L} = \mathcal{L}_{\text{Dice}} + \lambda \mathcal{L}_{\text{CE}}, \quad (1)$$

where λ balances the two terms. The encoder (Fig. 2) extracts multi-scale features. Quisque ullamcorper placerat ipsum. Cras nibh. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetur adipiscing elit. In hac habitasse platea dictumst. Integer tempus convallis augue. Etiam facilisis. Nunc elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida sollicitudin, felis odio placerat quam, ac pulvinar elit purus eget enim. Nunc vitae tortor. Proin tempus nibh sit amet nisl. Vivamus quis tortor vitae risus porta vehicula.

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IV. EXPERIMENTS

A. Comparison with State-of-the-Art

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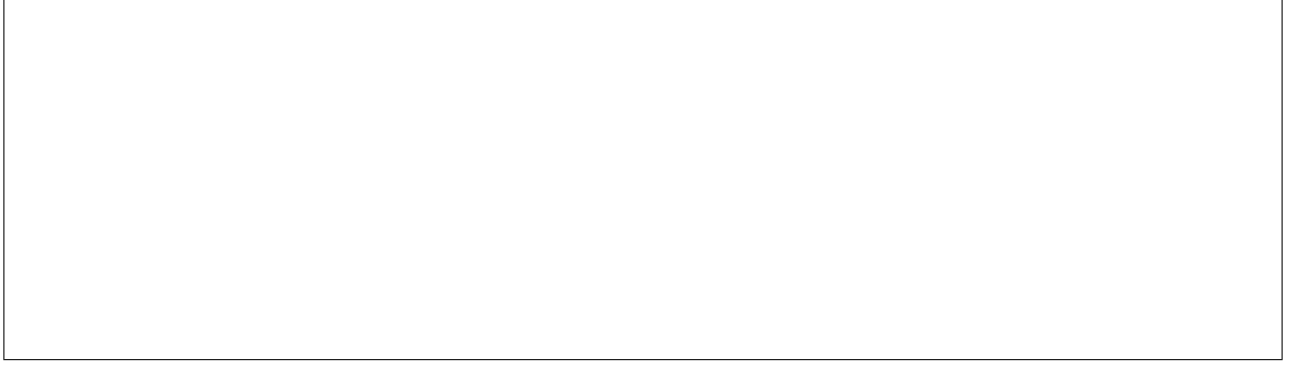


Fig. 1. Overall architecture of the proposed network. Promoted to `figure*` because it spans the full page width. Float specifier changed from `[H]` to `[t!]`.



Fig. 2. Encoder module detail. Kept as single-column `figure` since it does not need full-page width; sized with `\columnwidth`.

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TABLE I
COMPARISON WITH STATE-OF-THE-ART METHODS ON DATASET A.

Method	Dice (%)	HD95 (mm)	Params (M)
U-Net	84.2	41.2	31.0
TransUNet	86.1	38.5	85.6
Swin-UNet	87.0	36.9	27.1
Ours	88.4	35.1	42.3

B. Ablation Study

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C. Qualitative Results

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V. CONCLUSION

This manuscript shows the corrected two-column versions of every pattern demonstrated in the draft. The key fixes are: journal author footnotes (`\thanks`), mixed `figure/figure*` for narrow/wide floats, `table/table*` with `adjustbox` for wide tables, and removal of biography material for initial submission. Morbi luctus, wisi viverra faucibus pretium, nibh est placerat odio, nec commodo wisi enim eget quam. Quisque libero justo, consectetur a, feugiat vitae, porttitor eu, libero. Suspendisse sed mauris vitae elit sollicitudin malesuada. Maecenas ultricies eros sit amet ante. Ut venenatis velit. Maecenas sed mi eget dui varius euismod. Phasellus aliquet volutpat odio. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia Curae; Pellentesque sit amet pede ac sem eleifend consectetur. Nullam elementum, urna vel imperdiet sodales, elit ipsum pharetra ligula, ac pretium ante justo a nulla. Curabitur tristique arcu eu metus. Vestibulum lectus. Proin mauris. Proin eu nunc eu urna hendrerit faucibus. Aliquam auctor, pede consequat laoreet varius, eros tellus scelerisque quam, pellentesque hendrerit ipsum dolor sed augue. Nulla nec lacus.

TABLE II
ABLATION STUDY: IMPACT OF EACH PROPOSED COMPONENT.

Configuration	Dice	HD95	Jaccard	Prec.	Rec.	F1	Params
Baseline	84.2	41.2	0.731	0.853	0.832	0.842	31.0
+ Attention	86.1	38.5	0.755	0.871	0.851	0.861	36.4
+ Multi-scale	87.3	36.8	0.776	0.882	0.863	0.872	39.7
Full model	88.4	35.1	0.792	0.896	0.873	0.884	42.3



Fig. 3. Visual comparison of segmentation results. Four columns: input, ground truth, baseline, and ours. Promoted to figure* because side-by-side comparison needs full page width.

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