

Toward practical deployment of foundation models in radiology

~One-click segmentation for clinical use~

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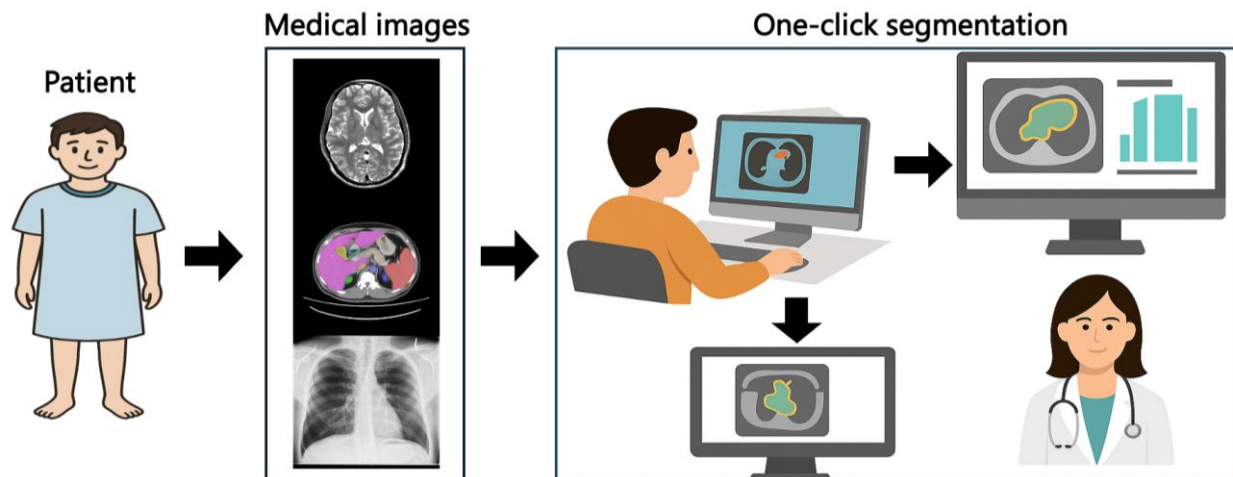
キーワード

One-click segmentation, clinical AI deployment, radiology integration



研究概要

Medical foundation models like MedSAM have shown promising results in research settings, but clinical deployment remains challenging. Hospitals face diverse imaging conditions, scanner variability, and time constraints. Precise prompts are rarely available, and tools must be intuitive and efficient. To address this, we propose MedSAM Guider, a lightweight enhancement that significantly improves segmentation accuracy even with coarse or imperfect prompts. On brain MRI (ATLAS dataset), it achieved Dice scores between 0.70 and 0.88, outperforming original MedSAM's baseline of 0.21 to 0.75 under similar conditions. To further facilitate clinical adoption, we introduce MedClick AI, a one-click segmentation tool that requires no complex setup. It delivers accurate results across imaging formats, scanner types, and resolutions, and is designed to integrate seamlessly with PACS and HIS workflows. The system produces interpretable outputs to support clinical trust and decision-making. This work responds to a pressing need, making AI-based tools simple, robust, and ready for routine use in hospital environments.



アピールポイント

- This system solves a real problem: AI tools often fail in hospitals due to complexity and strict prompt requirements.
- It is lightweight, interpretable, and ready for integration with hospital systems like PACS and HIS.

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2. M. Nouman et al., "Evaluating Segmentation Accuracy with Diverse Prompt Strategies in MedSAM," Proc. IEEE ISBI, 2025. DOI: 10.1109/ISBI60581.2025.10980865
3. M. Nouman et al., "Rethinking MedSAM: Performance Discrepancies in Clinical Applications," Proc. IEEE FMLDS, 2024. DOI: 10.1109/FMLDS63805.2024.0006s