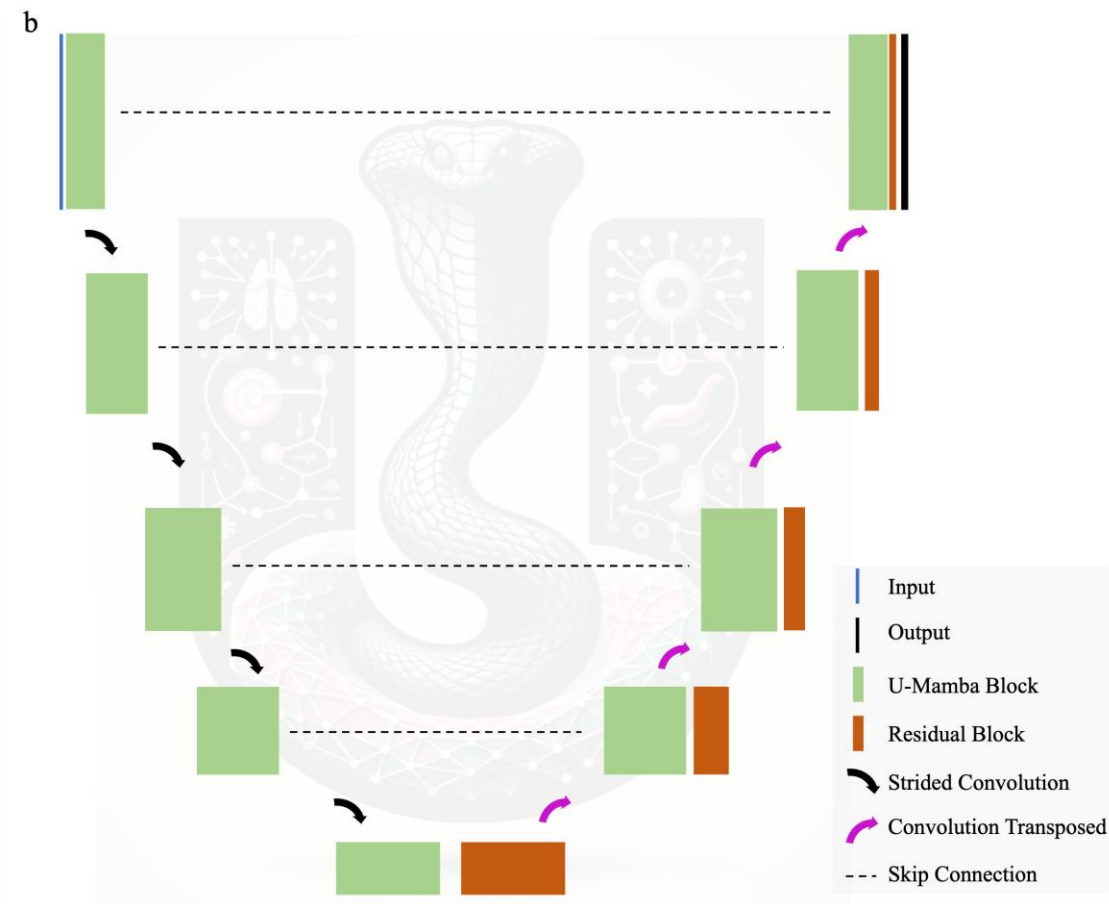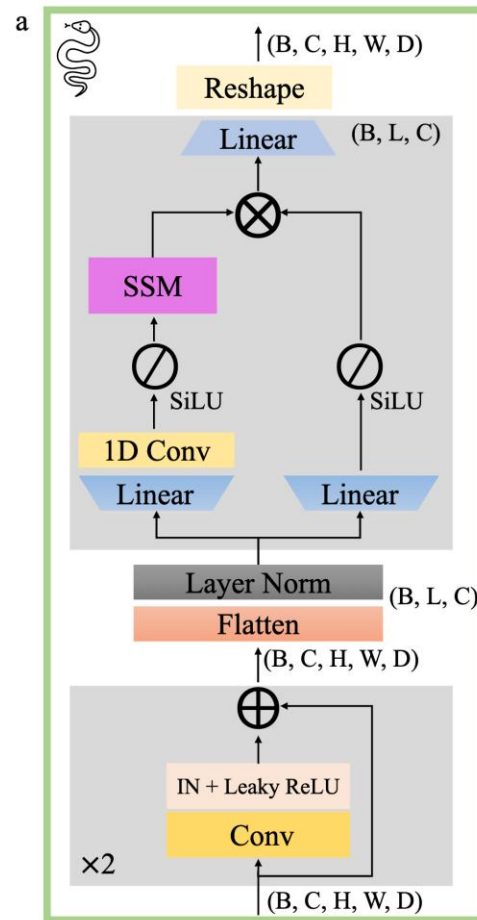# HUMamba+双向特征蒸馏
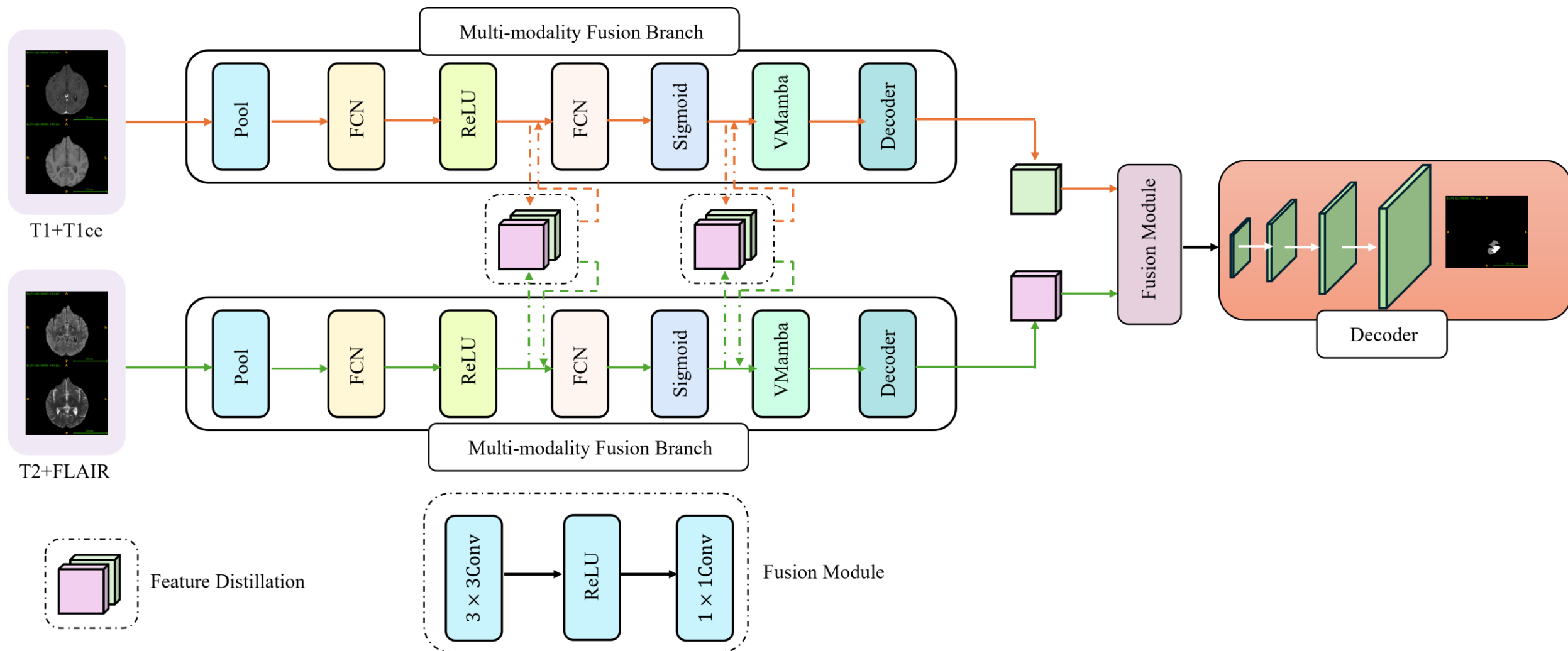
U-Mamba: Enhancing Long-range Dependency for Biomedical Image Segmentation

- 2024

- 多伦多大学研究人员提出

- Cited: **807** (截至2025.09.17)

Ma J, Li F, Wang B. U-mamba: Enhancing long-range dependency for biomedical image segmentation[J]. arXiv preprint arXiv:2401.04722, 2024.

HUMamba+双向特征蒸馏

Multi-modality Fusion Branch

Multi-modality Fusion Branch

T1+T1ce

T2+FLAIR

Feature Distillation

Fusion Module

Decoder

多模态融合太简单！

HUMamba+双向特征蒸馏

Dataset	Dice ↑				HD95(mm) ↓			
	WT	TC	ET	Mean	WT	TC	ET	Mean
BraTS2019	$0.9087_{\pm0.0722}$	$0.8266_{\pm0.1813}$	$0.6899_{\pm0.2941}$	$0.8084_{\pm0.1825}$	$4.4106_{\pm5.0706}$	$6.0109_{\pm6.5331}$	$5.4939_{\pm7.6745}$	$5.3051_{\pm6.4261}$
BraTS2023	$0.9384_{\pm0.0591}$	$0.9119_{\pm0.1357}$	$0.8504_{\pm0.1958}$	$0.9002_{\pm0.1302}$	$3.7357_{\pm7.2066}$	$4.2853_{\pm9.2681}$	$3.6901_{\pm8.4098}$	$3.9037_{\pm8.2948}$
BraTS2024	$0.8617_{\pm0.0949}$	$0.7693_{\pm0.2169}$	$0.5522_{\pm0.3824}$	$0.7277_{\pm0.2314}$	$5.8670_{\pm11.1514}$	$9.0651_{\pm13.1882}$	$6.9414_{\pm10.5994}$	$7.2912_{\pm11.6463}$

BraTS2019
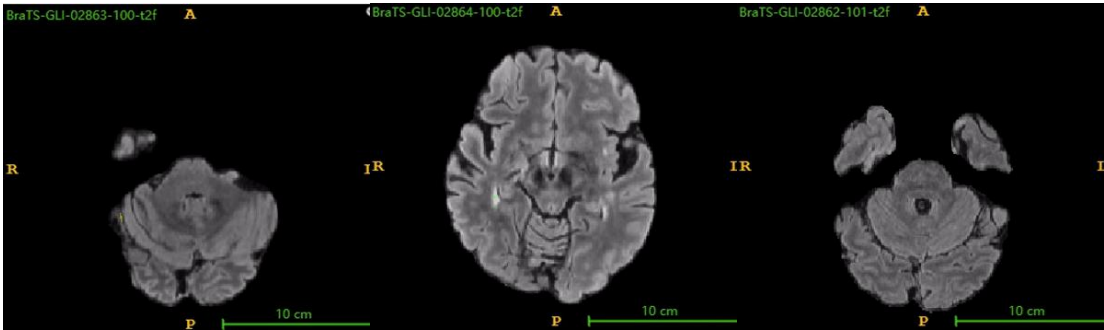
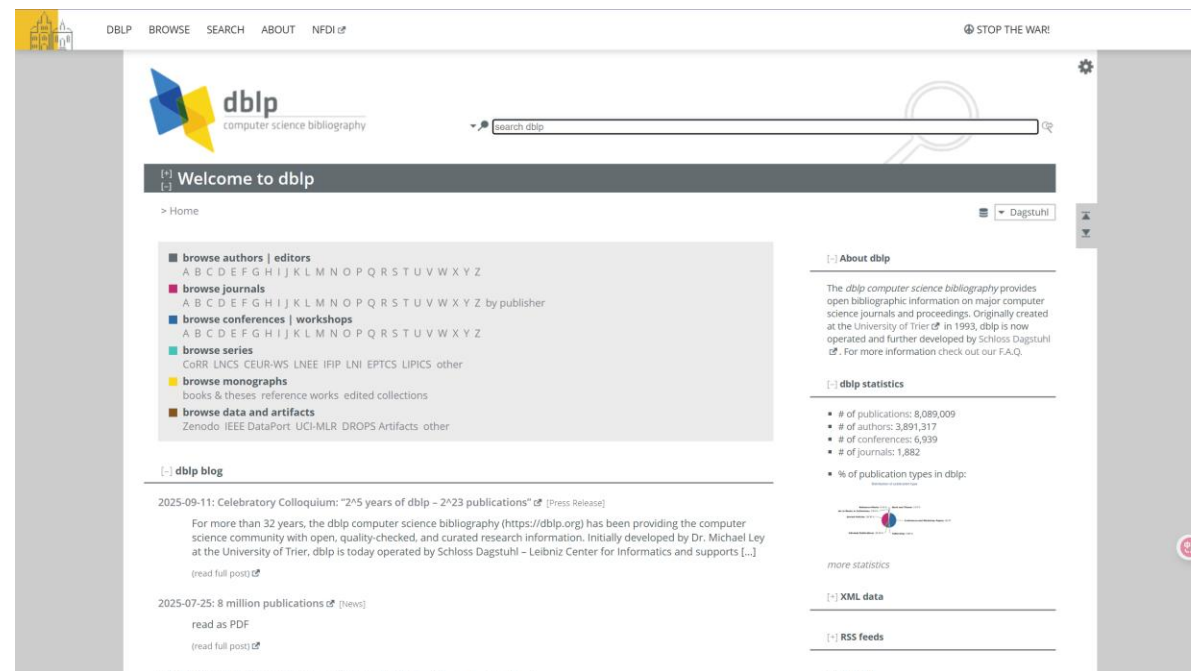

BraTS2024
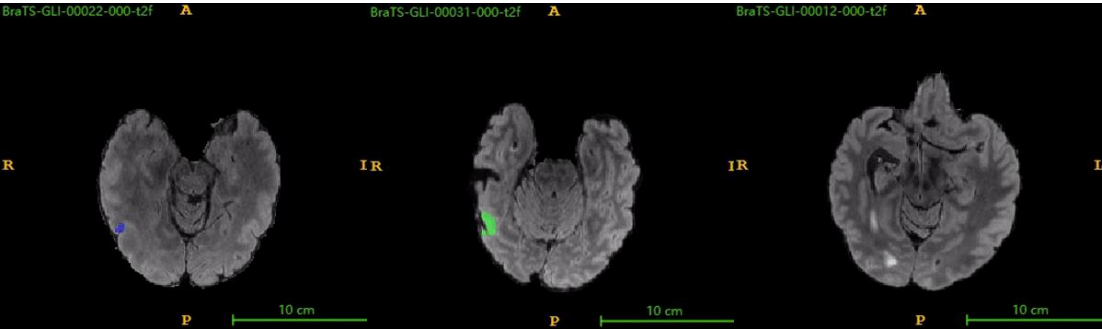
BraTS2023

科研工具

> **检索/下载文献**

Google Scholar、Web Of Science(校园网)、SPIS学术资源在线(文献求助)、dblp、期刊主页

科研工具

➢ **检索/下载文献**

Google Scholar、Web Of Science(校园网)、SPIS学术资源在线(文献求助)、dblp、期刊主页

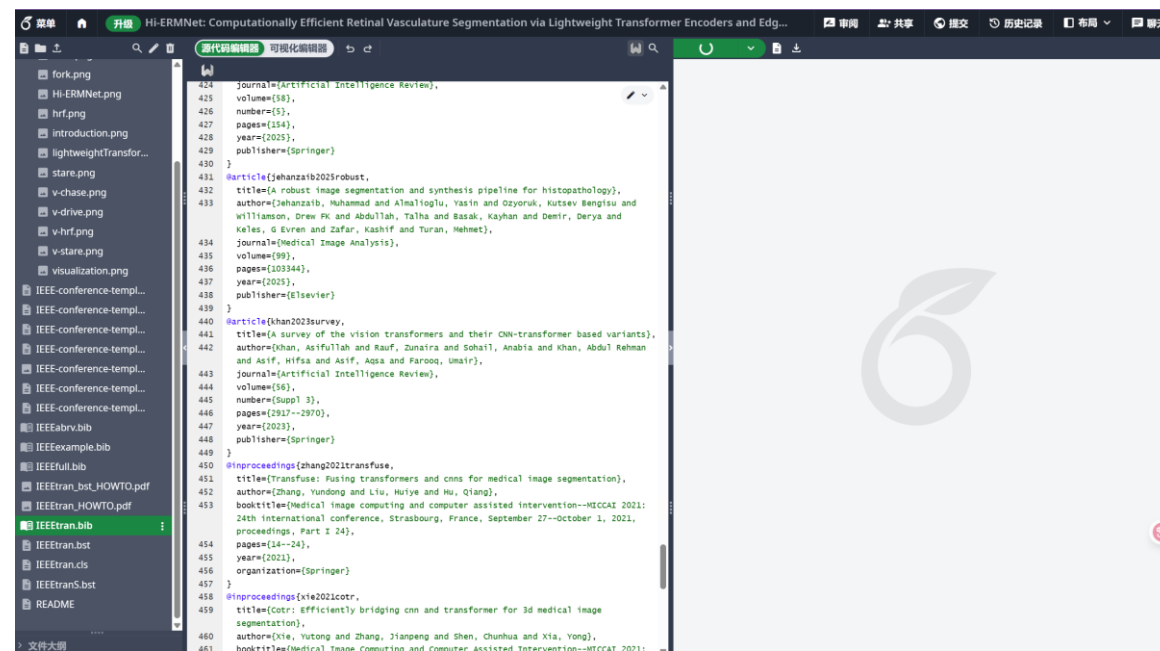# 科研工具
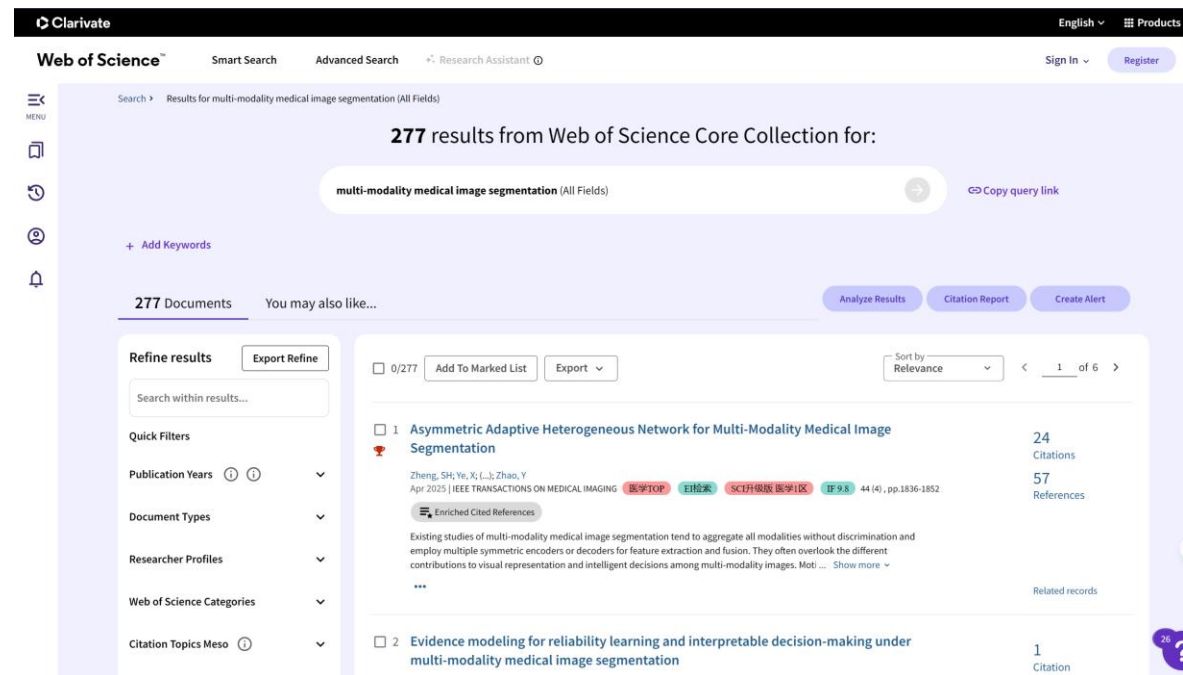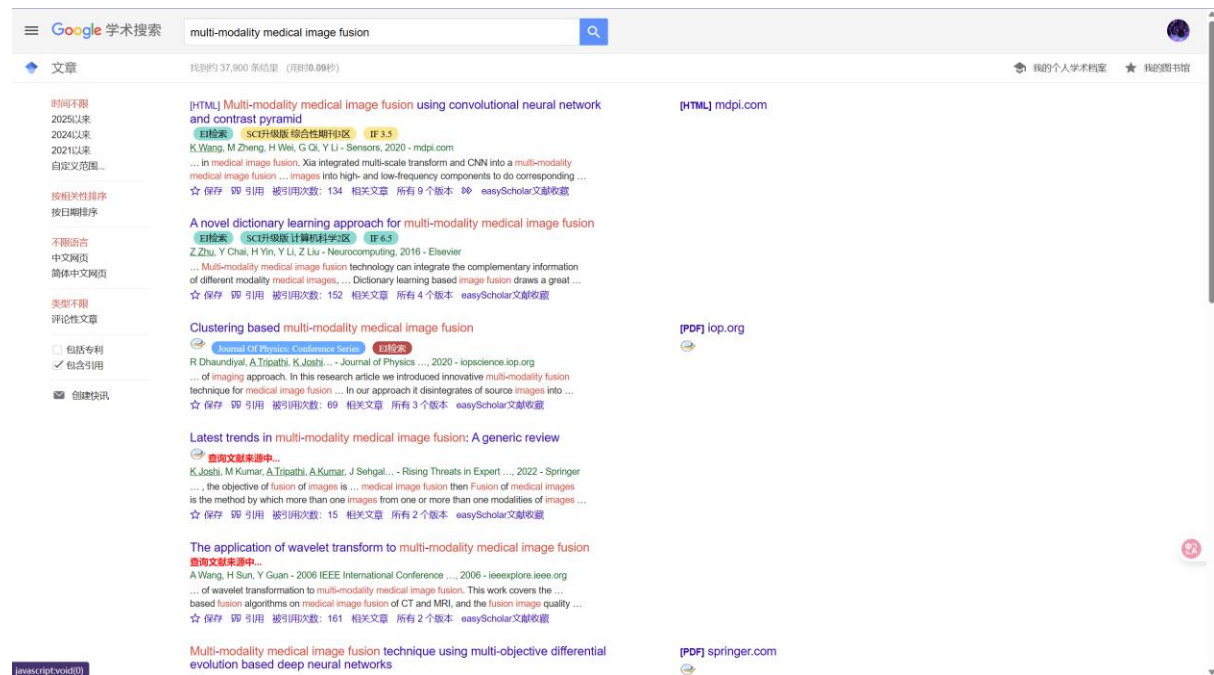
> **文献阅读/文献管理**

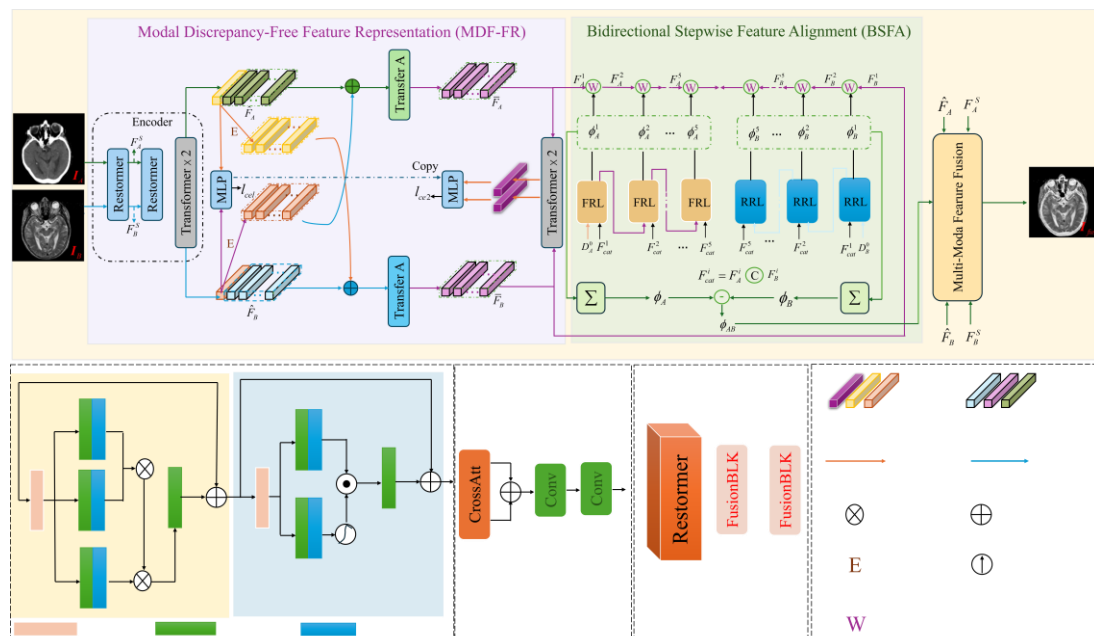**小绿鲸英文文献阅读器**

科研工具
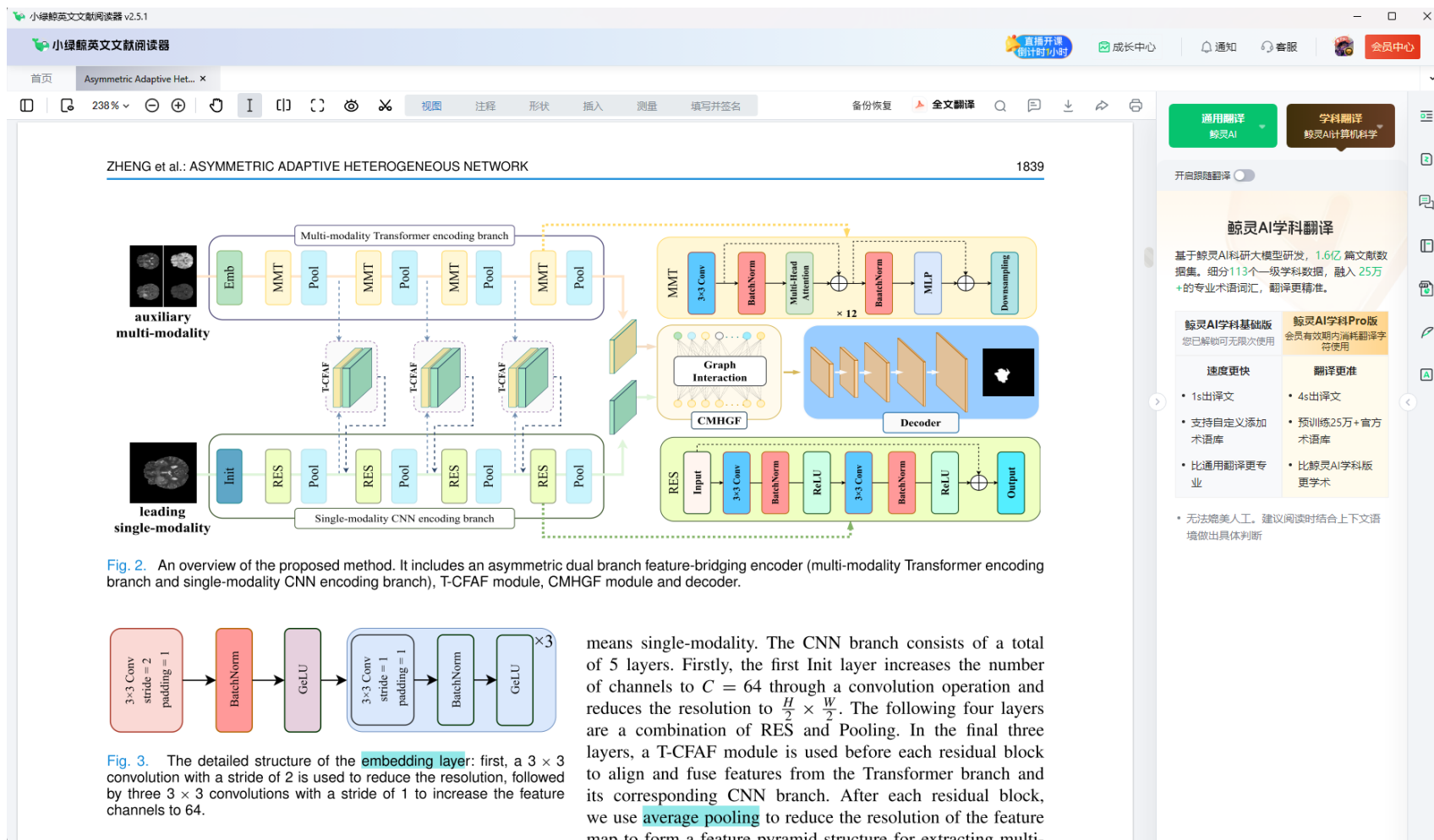
➢ **编程与开发**

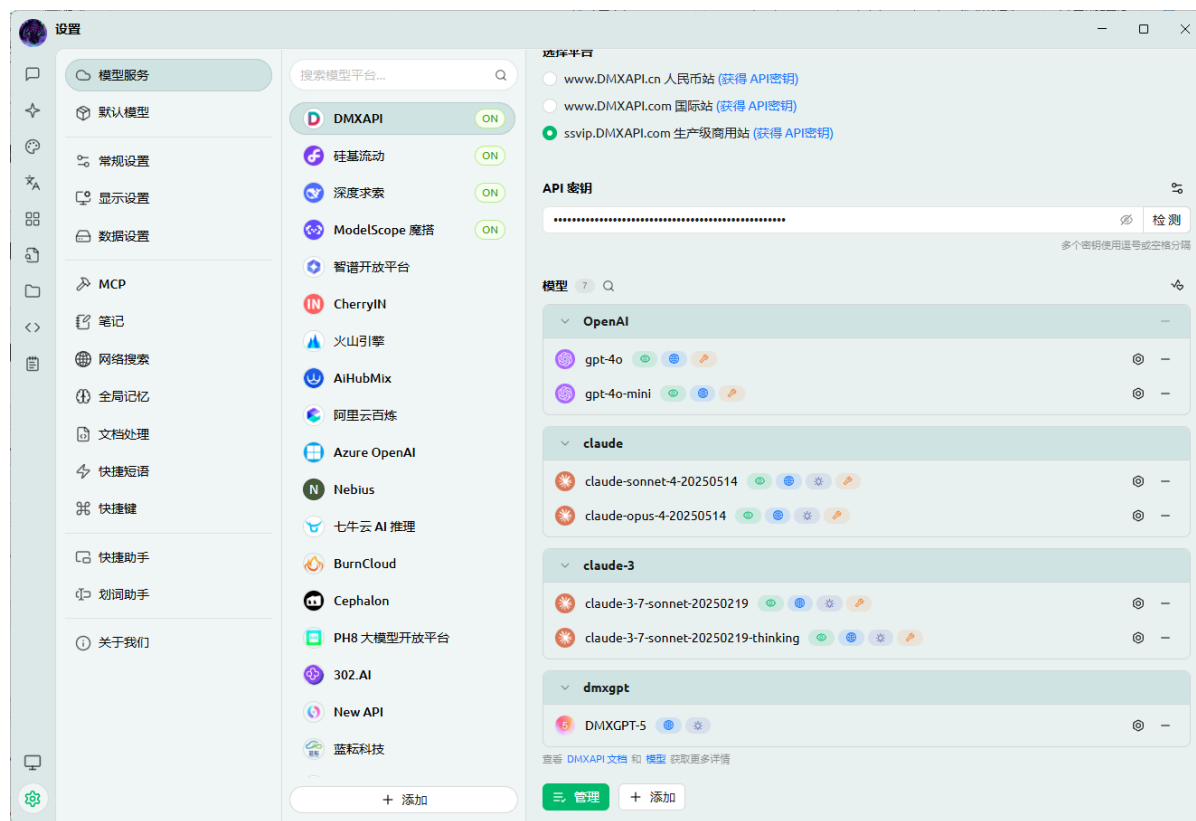**Github、Python、Pycharm、VS Code**

➢ **论文写作与画图、数据分析**

PPT(画图)、Adobe Illustrator 、LaTex(本地或在线Overleaf)、Python和Origin(数据分析)

科研工具

➤ **大语言模型**

Claude(代码)、Chat GPT(翻译、润色)、DeepSeek(中文)、Gemini
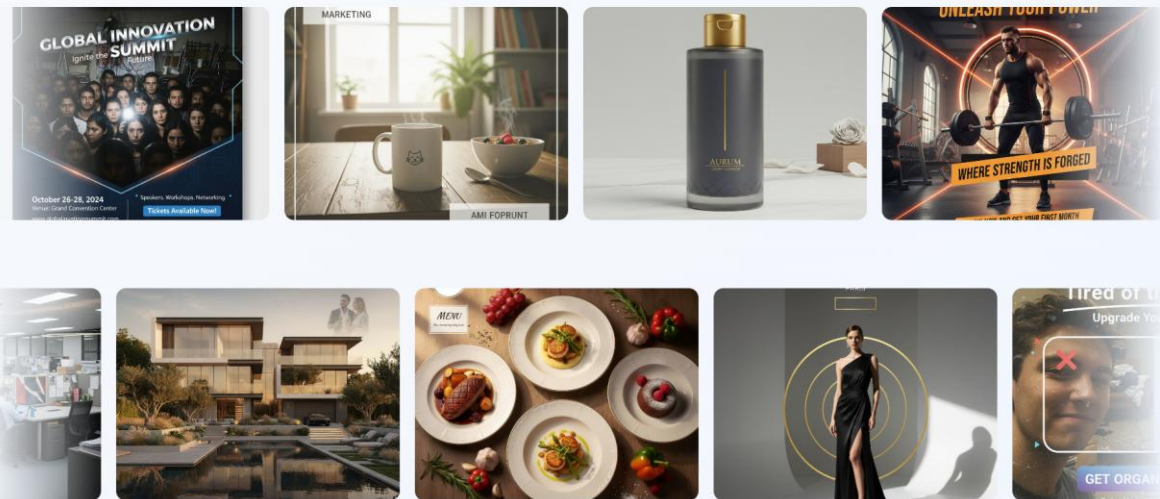
Nano Banana

> **其他**

插图配色：ColorSpace、ColorKit …

公式识别：SimpleTex(高峰期收费)、大语言模型 …

期刊或会议分区：Letpub、easyScholar(浏览器扩展) …