

Future Directions: The Future of Multimodal Medical AI

New Modality Integration, Large-scale Pre-training, Real-time Clinical Application, Explainability Enhancement

Foundation Models

Large-scale Multimodal Pre-training

- Medical-specific GPT-4 level models
- Simultaneous learning of diverse modalities
- Few-shot adaptation capabilities
- General-purpose medical AI platform

New Modalities

Expanding Data Types

- Wearable sensor integration
- Microbiome data
- Social media health information
- Environmental factor data

Real-time Systems

Immediate Clinical Support

- Edge AI deployment
- Latency minimization
- Continual learning
- Mobile healthcare

Ethics and Regulation

Responsible AI Development

- Bias mitigation techniques
- Privacy-preserving learning
- International standardization
- Clinical validation protocols

Personalized

Preventive

Improved

Precision Medicine

Health Management

Healthcare Accessibility