Computing and Healthcare

Presented by Joy Liu at JamCoders 2025

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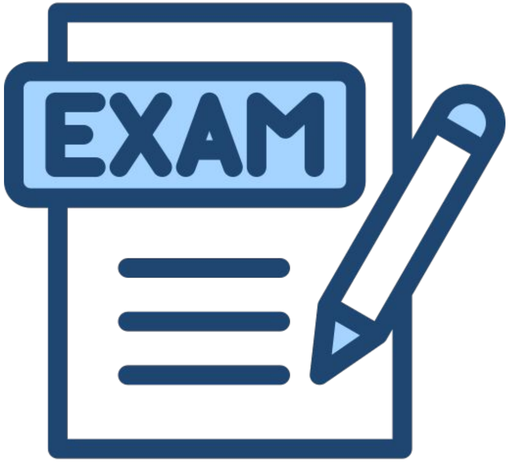
Cancer: Earlier Detection + Reduced Overtreatment

Who do we screen?

When do we screen?

Does our algorithm work?



Screening Guidelines

- Risk scores determine who gets supplemental screening or chemoprevention
- Risk is based on your personal factors and family medical history

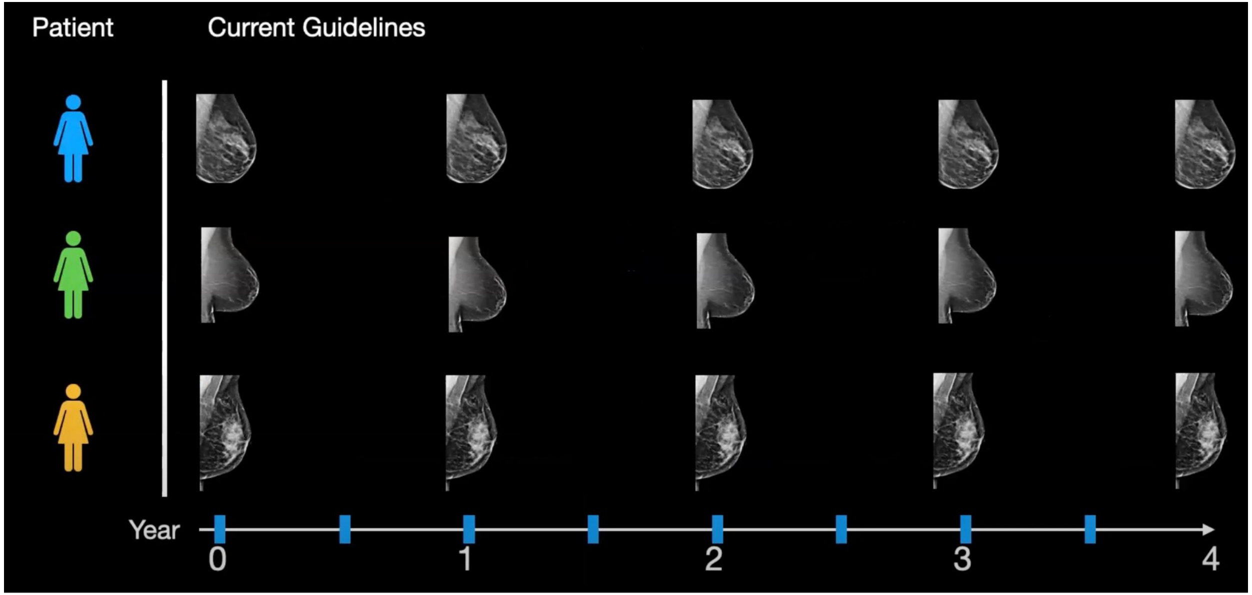
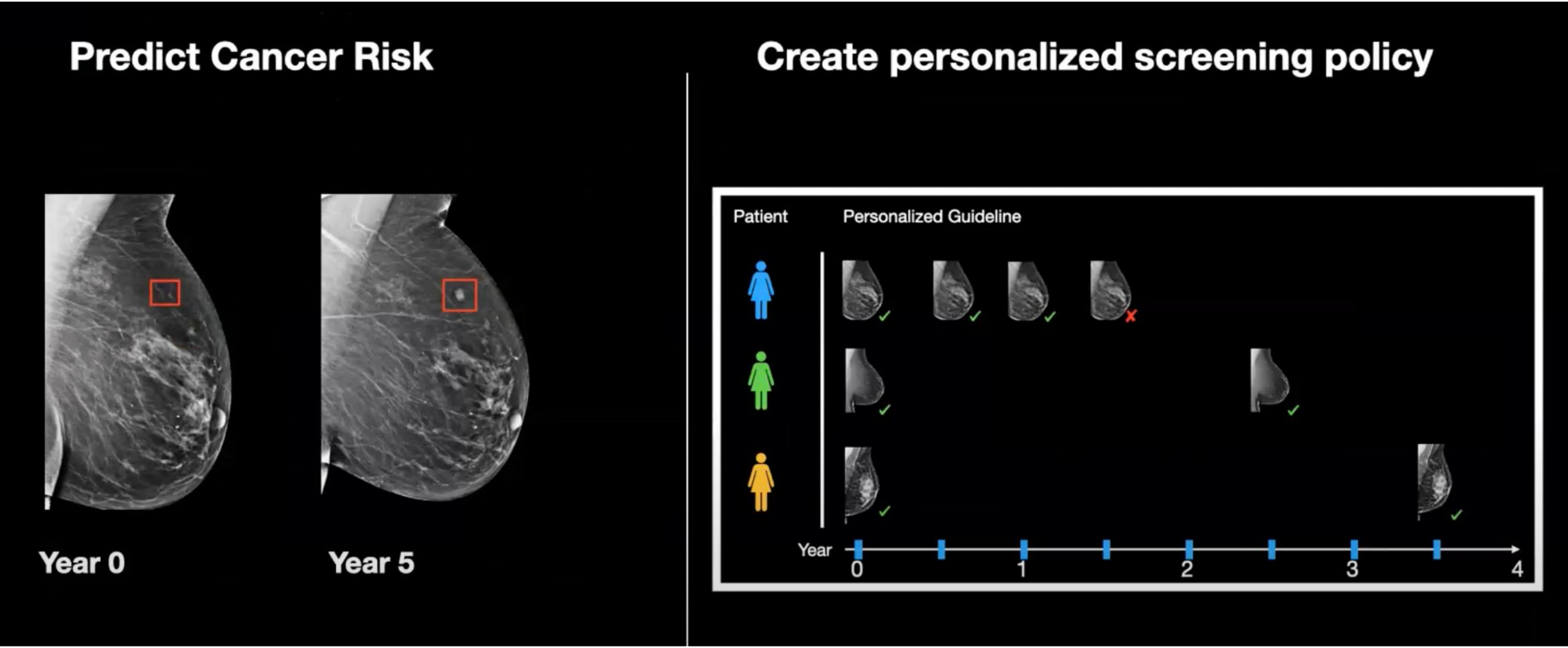


Image Credit: [MedAI #97: AI for Personalized Cancer Screening | Adam Yala]

Can we do better?

	Early Detection	Reduce Overtreatment
Screen constantly	✅	❌
Never screen	❌	✅



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5. Test on data the model has never seen
6. Deploy it in the clinic!

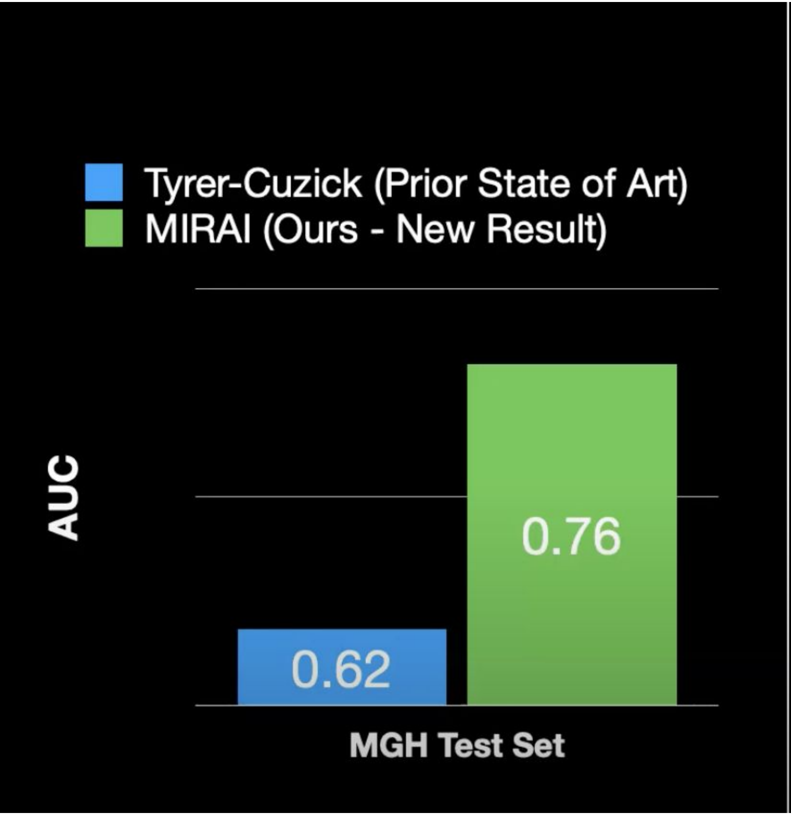


Image Credit: [MedAI #97: AI for Personalized Cancer Screening | Adam Yala]

What else can you do?

Make Screening Cheaper, Less Invasive for Patients

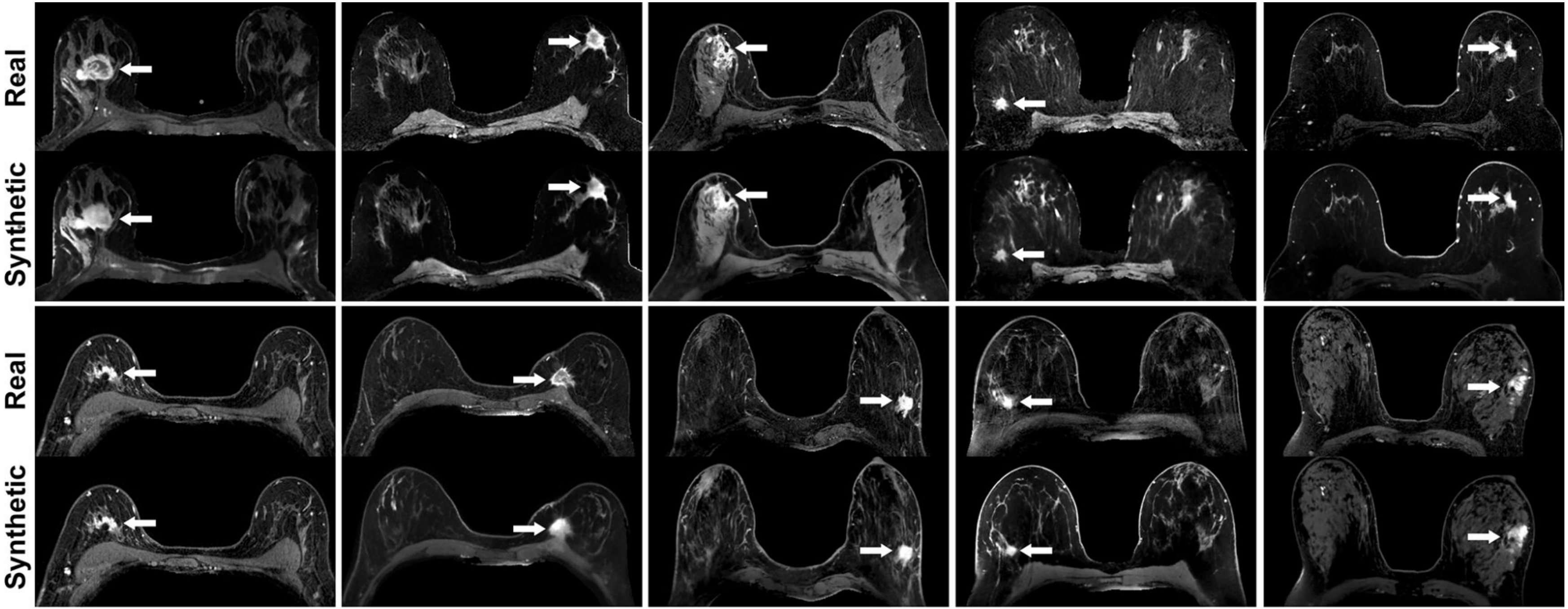
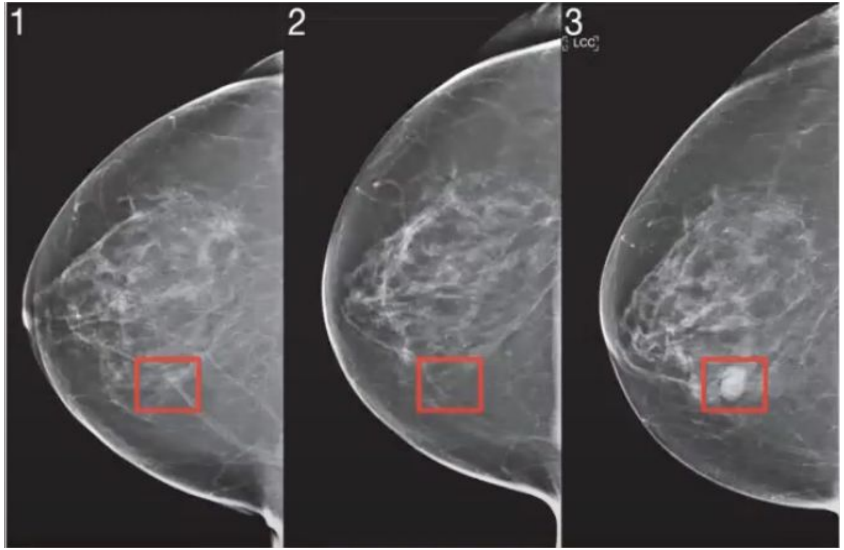
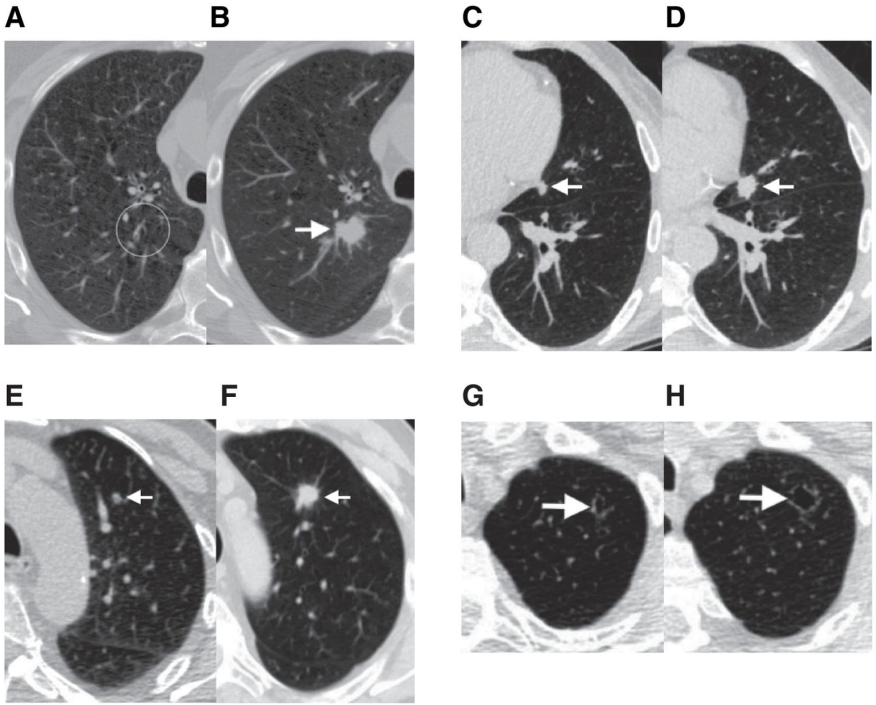


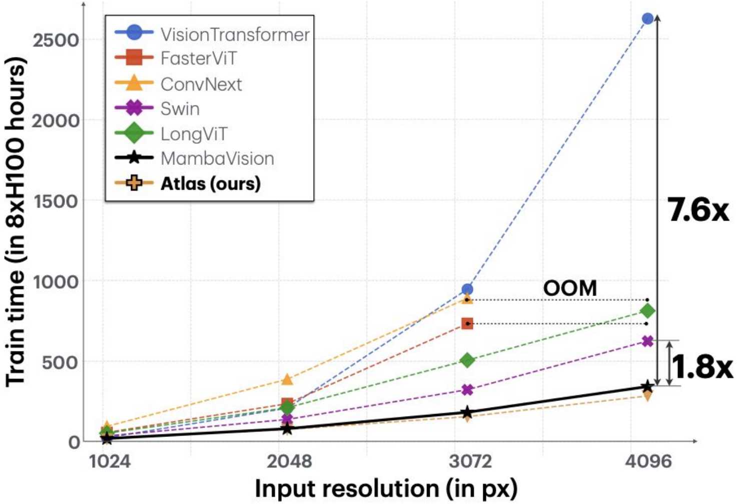
Image Credit: [Feasibility of Simulated Contrast-enhanced Breast MRI for Imaging Malignant Masses Using Deep Learning]

Help Doctors Help Patients





New Computational Methods



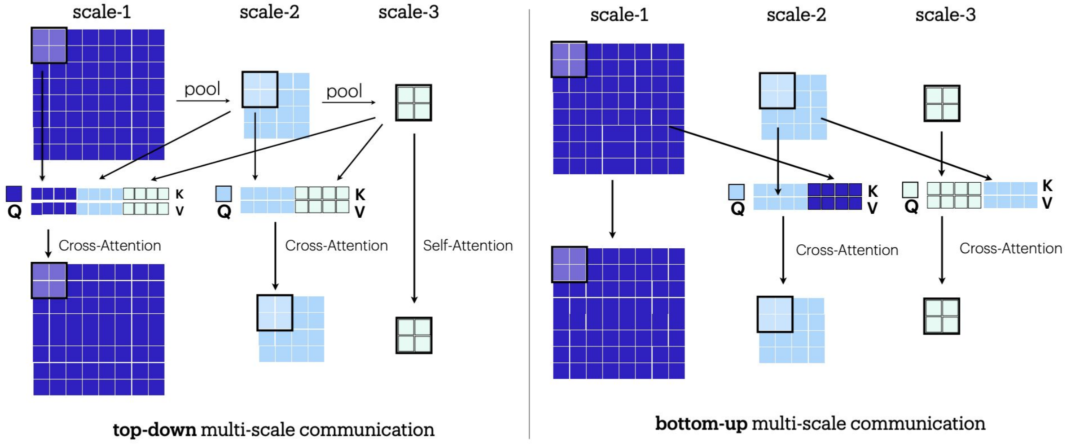
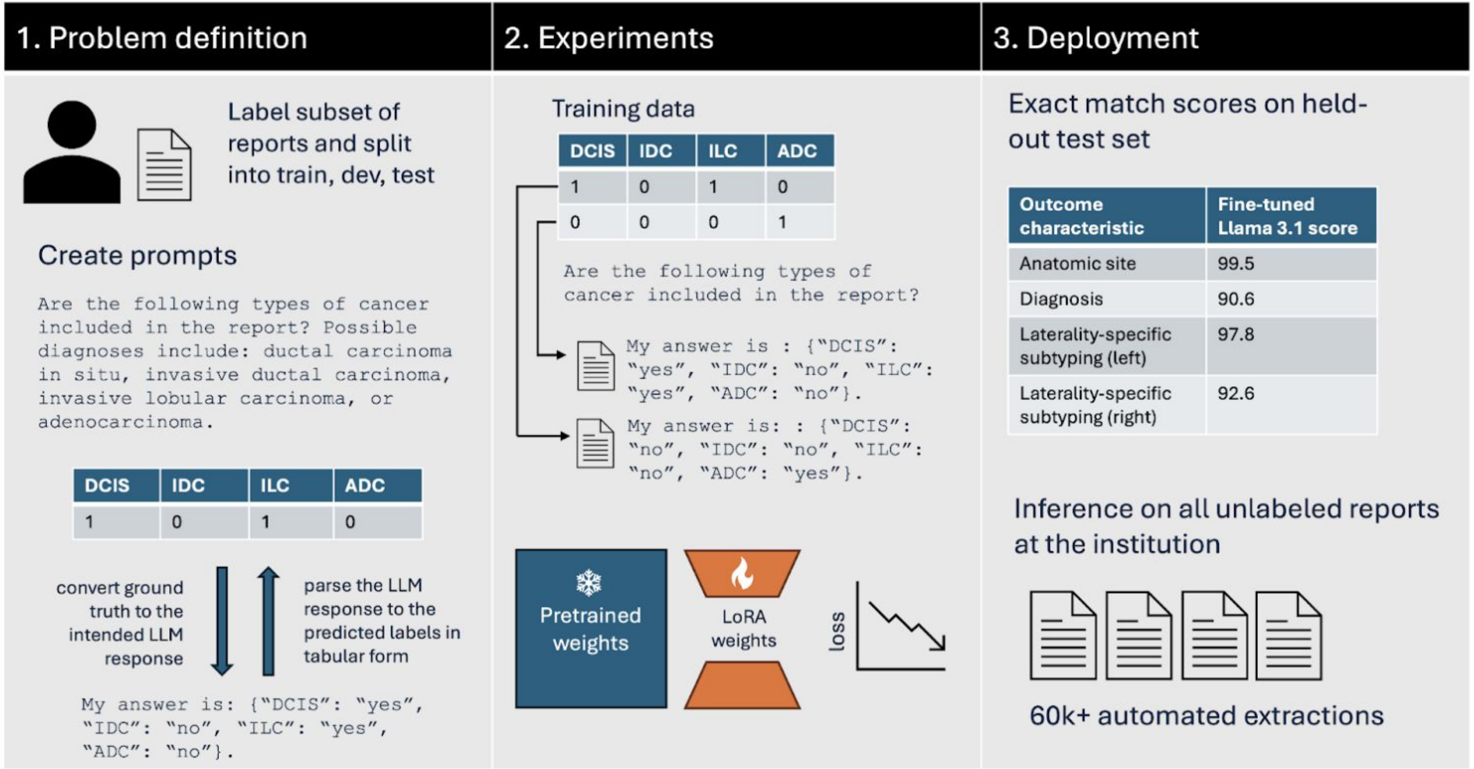


Image credit: [2503.12355] Atlas: Multi-Scale Attention Improves Long Context Image Modeling

Help Clinical Researchers Access Computational Tools

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Thanks for listening!