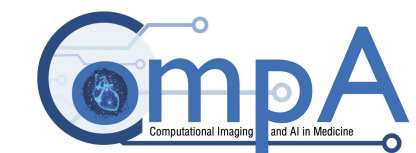


From General to Clinical: Adapting Foundation Models for Medical Images

Kick-off Presentation
July 10th, 2025



Who are we?



Computational Imaging and AI in Medicine
Prof. Dr. Julia Schnabel

Who are we?

Sameer Ambekar



Research interest:

- Distribution shifts
- Test-time adaptation
- Foundation models

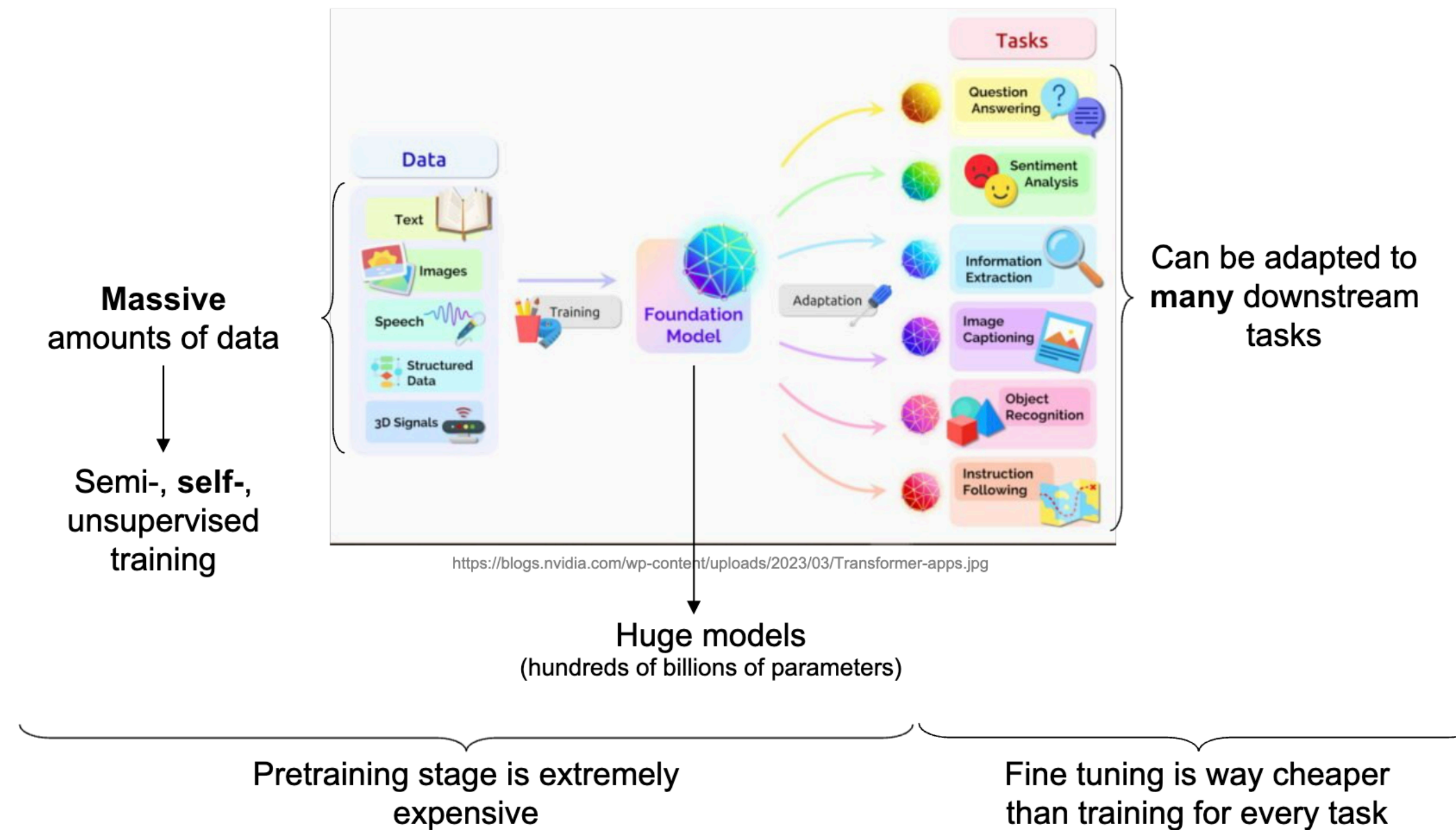
Dr. Laura Daza



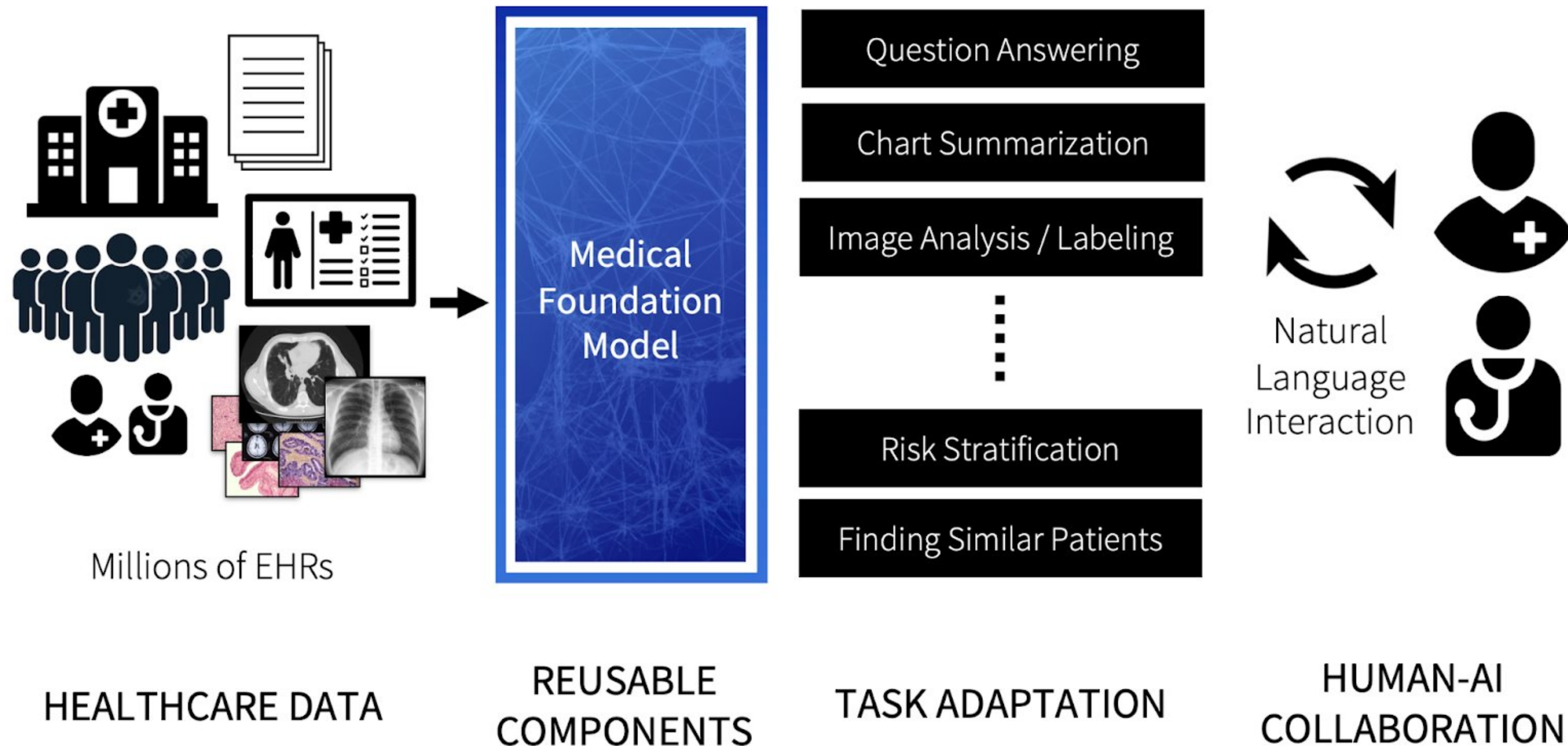
Research interest:

- Multi-modal Learning
- Foundation models
- Segmentation

Towards Foundation Models



Towards Medical Foundation Models



How to use shots for Foundation models?

Zero-Shot

```
1 Translate English to French: ← task description
2 cheese => ..... ← prompt
```

Model predicts the answer with a natural language task description.

No Gradient updates

One-Shot

```
1 Translate English to French: ← task description
2 sea otter => loutre de mer ← example
3 cheese => ..... ← prompt
```

In addition to task description, the model sees a single example of the task.

No Gradient updates

Few-Shot

```
1 Translate English to French: ← task description
2 sea otter => loutre de mer ← examples
3 peppermint => menthe poivrée ←
4 plush girafe => girafe peluche ←
5 cheese => ..... ← prompt
```

In addition to task description, the model sees a few examples of the task.

No Gradient updates

Goals of the Seminar

Understand:

(i) What is self supervised learning (SSL):

Learn strategies to leverage large corpuses of data for pretraining large models

(ii) What are foundation models (FM):

Understand what FM are and how do they work

(iii) Adaptation of FM for clinical applications

Learn:

How to read and present a scientific paper

How to design and present a scientific poster

Know better:

A wide range of foundation models and how to adapt and align them to medical imaging applications

Guest speaker talks on the topic