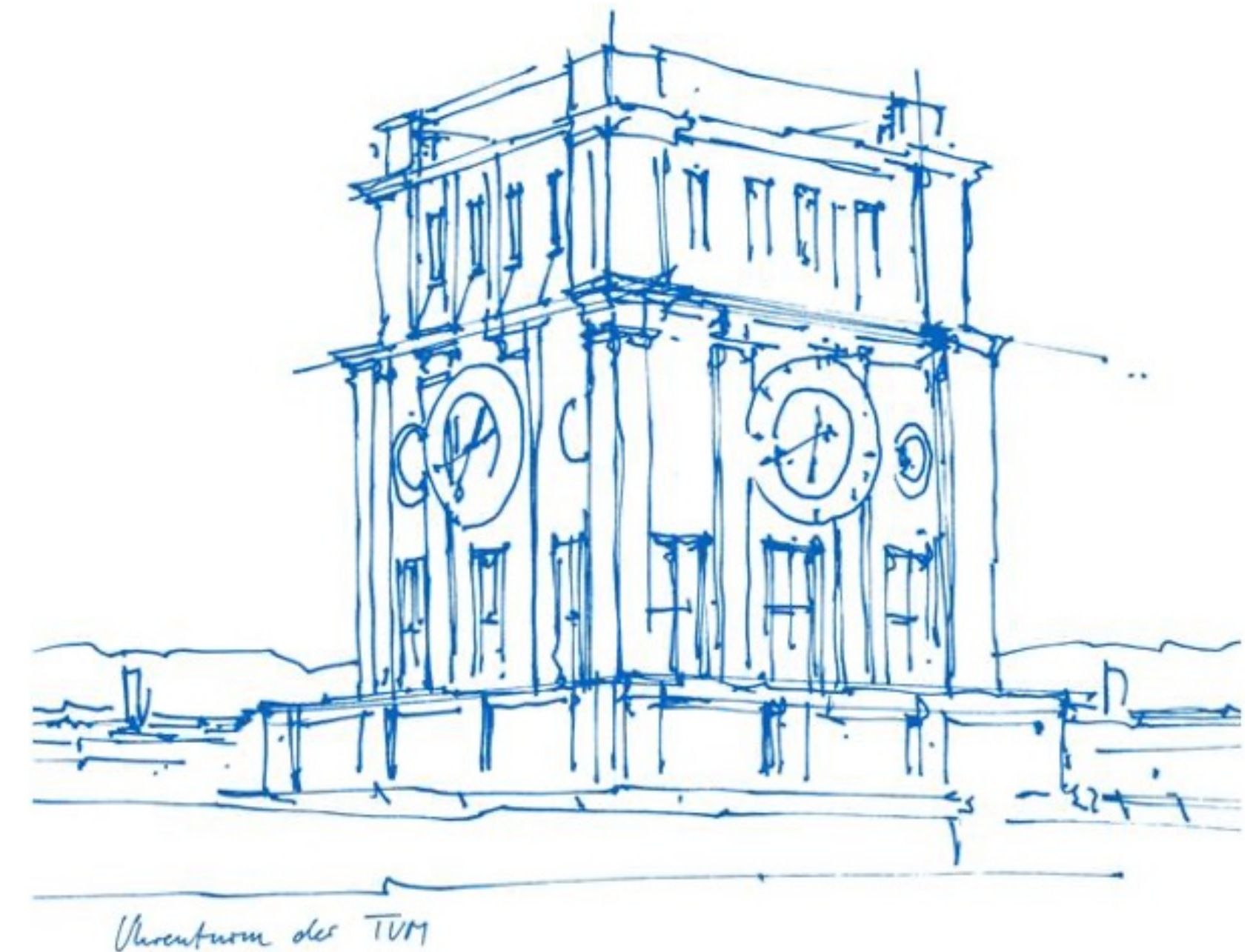# Master-Seminar:
Multi-modal AI for Medicine (IN2107)

Information session

Professor Daniel Rueckert,
Dr. Huaqi (Harvey) Qiu,
Paul Hager,
Philip Müller,
Tobias Susetzky

I31 — Chair for Artificial Intelligence in Healthcare and Medicine - **AIMED**
Joint Appointment of the Faculties of Informatics and Medicine
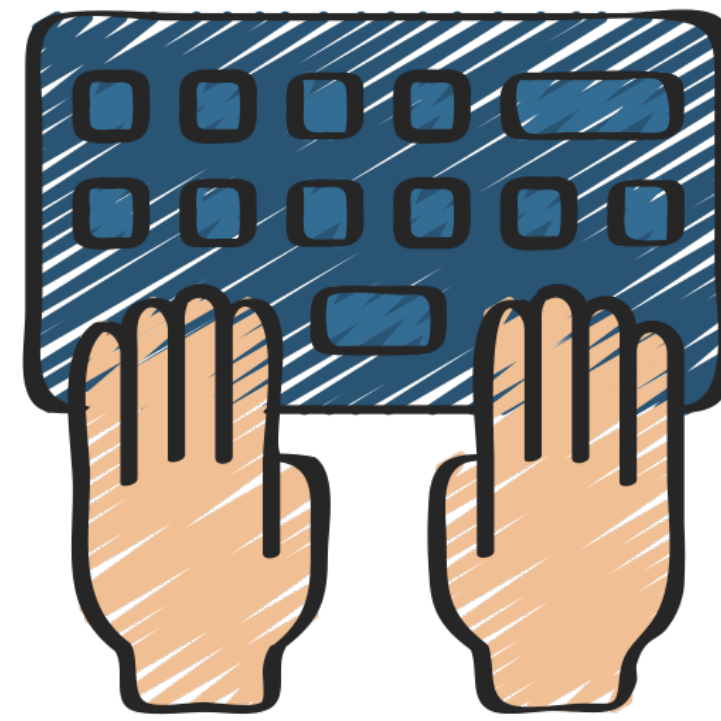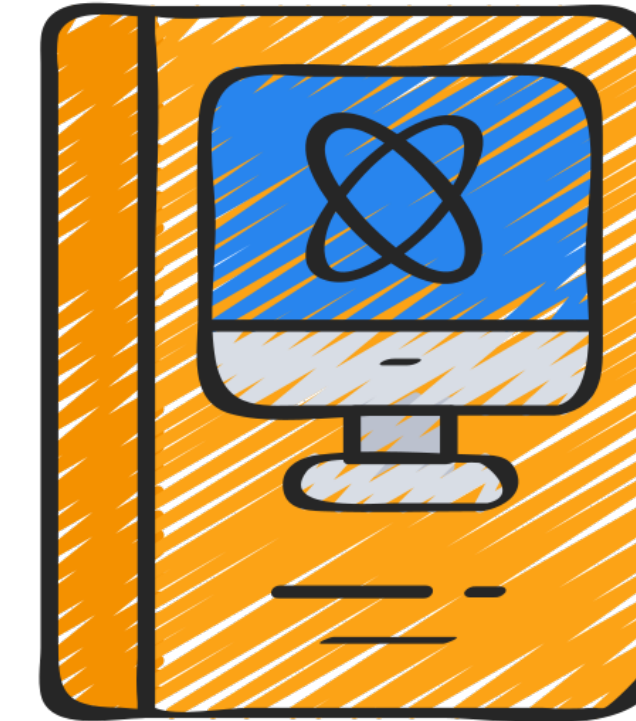
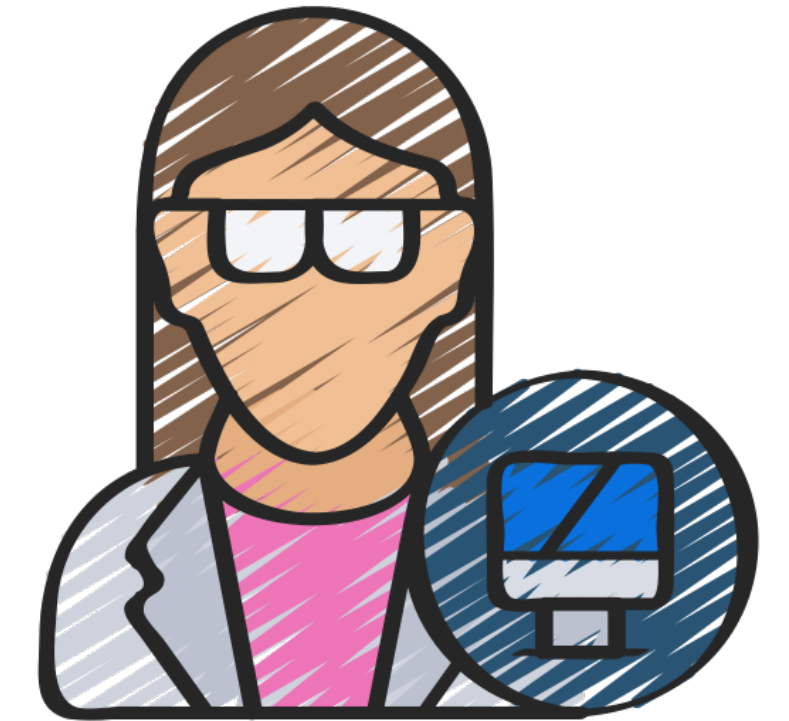# The scientific process

Read   **Experiment**   **Write**   **Publish**   **Present**
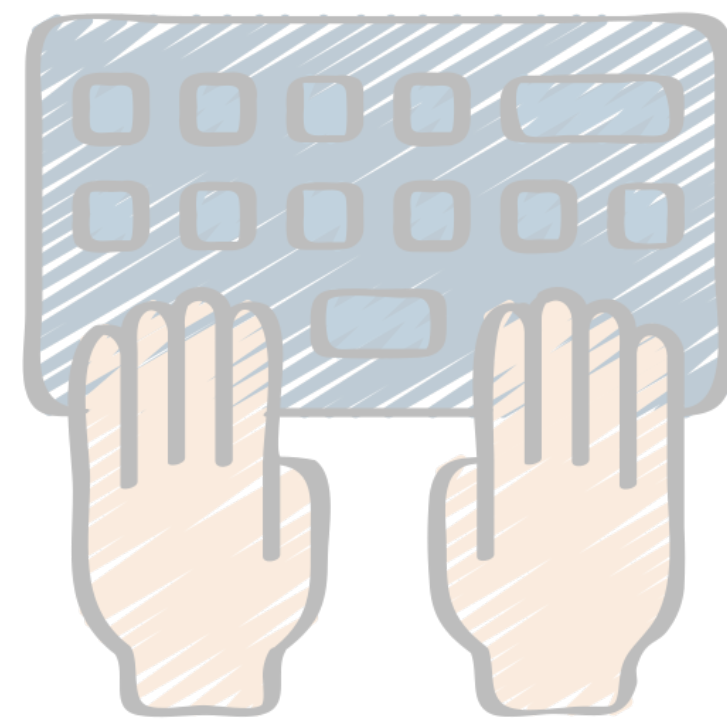
The scientific process

This seminar

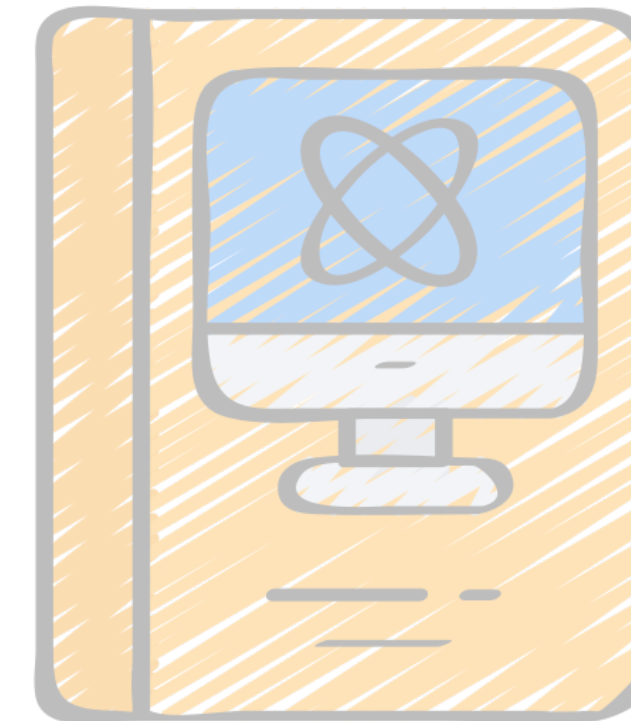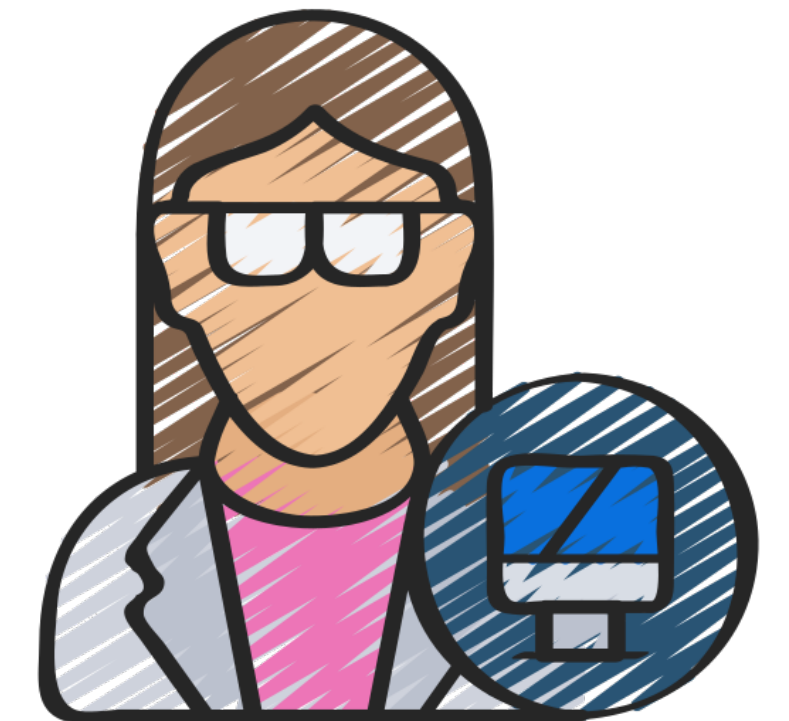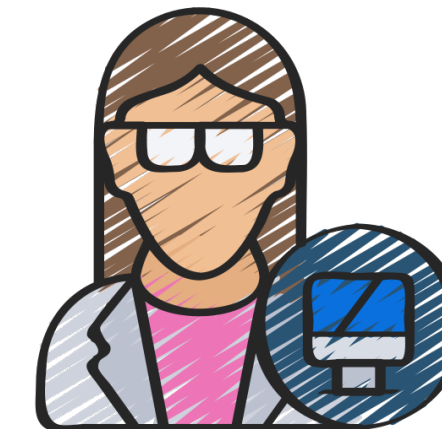**Read**   Experiment   Write   Publish   **Present**

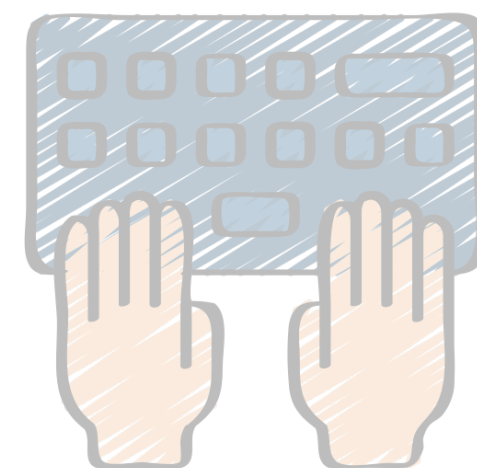# Your tasks

- Choose a paper and *really read it*

- Give a 15-minute presentation about the paper

  - Summary, background, strengths and weaknesses
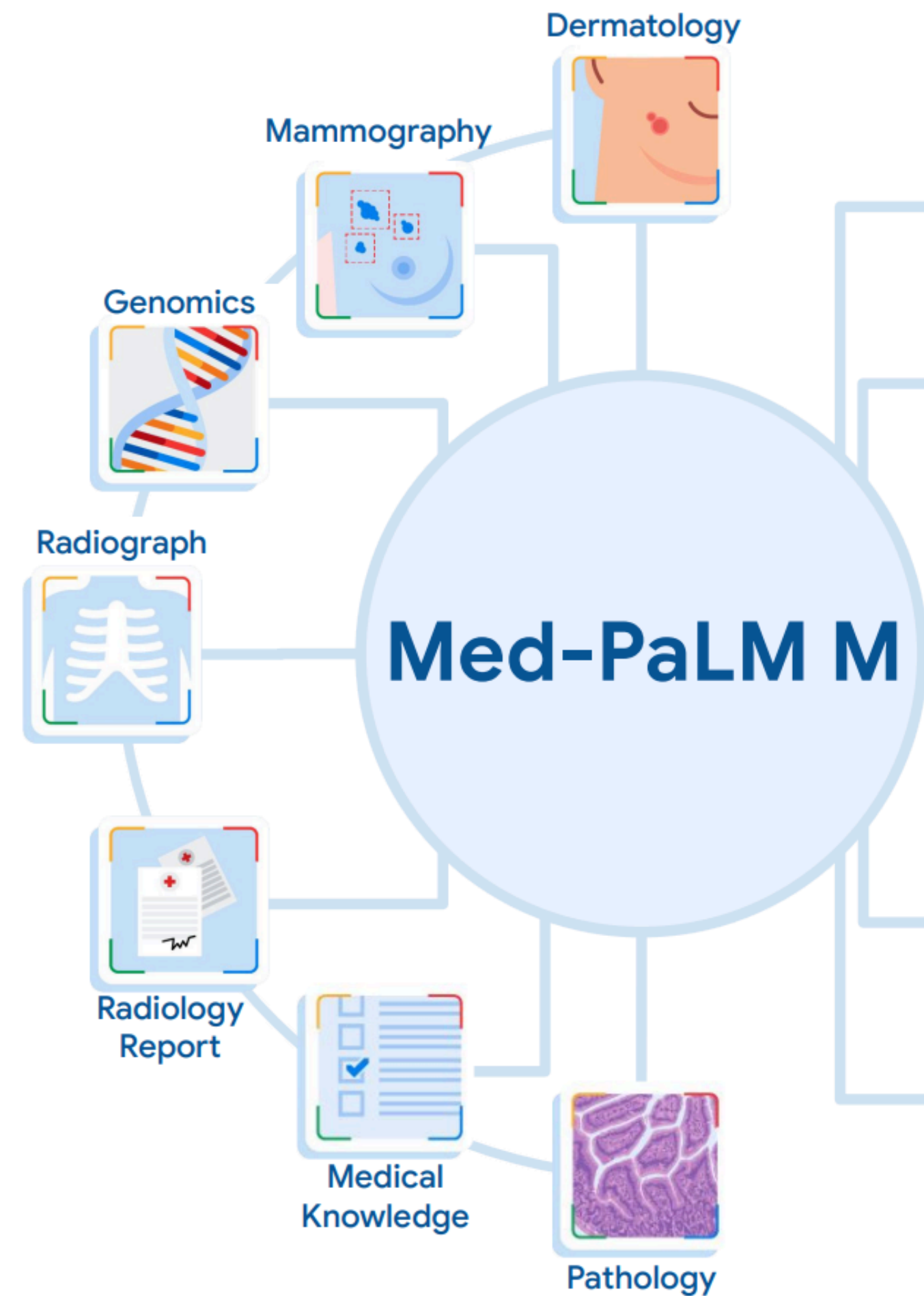
- Participate in discussions

- Write a 2-page report

Multi-Modal AI in Medicine and Healthcare

[1] Tao Tu, Shekoofeh Azizi et al.,Towards Generalist Biomedical AI, Google Research and Google DeepMind (2023)

Background
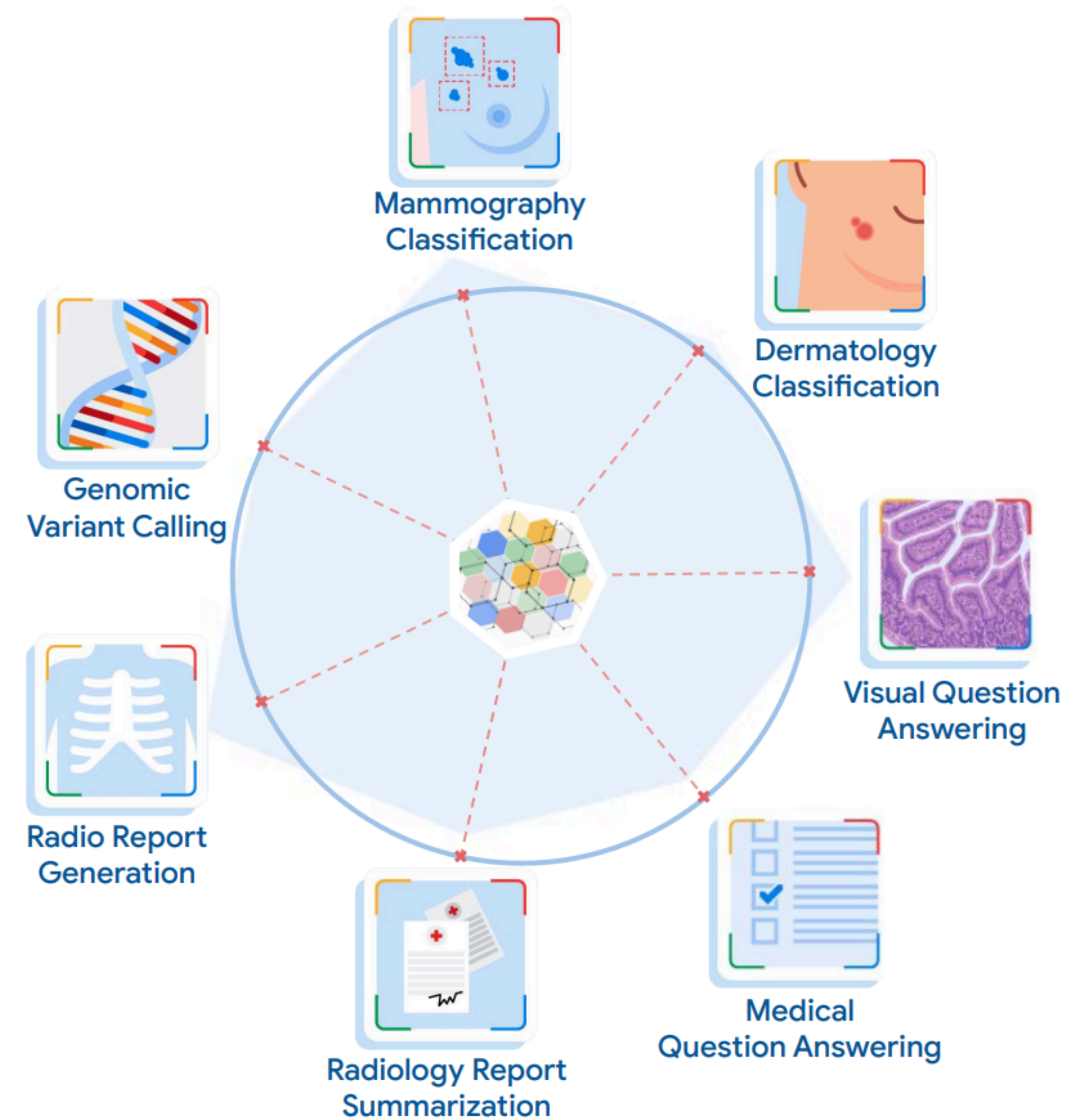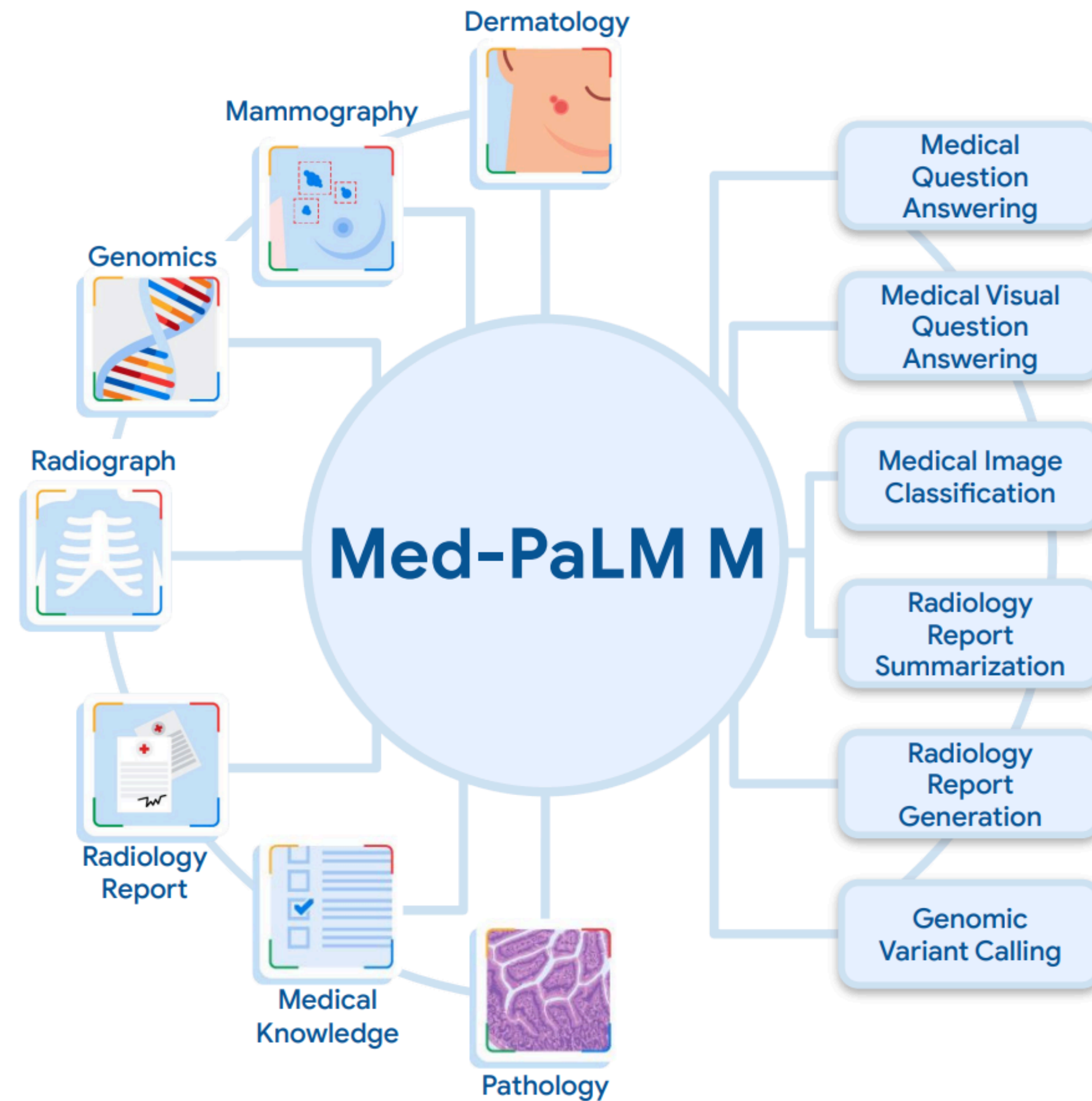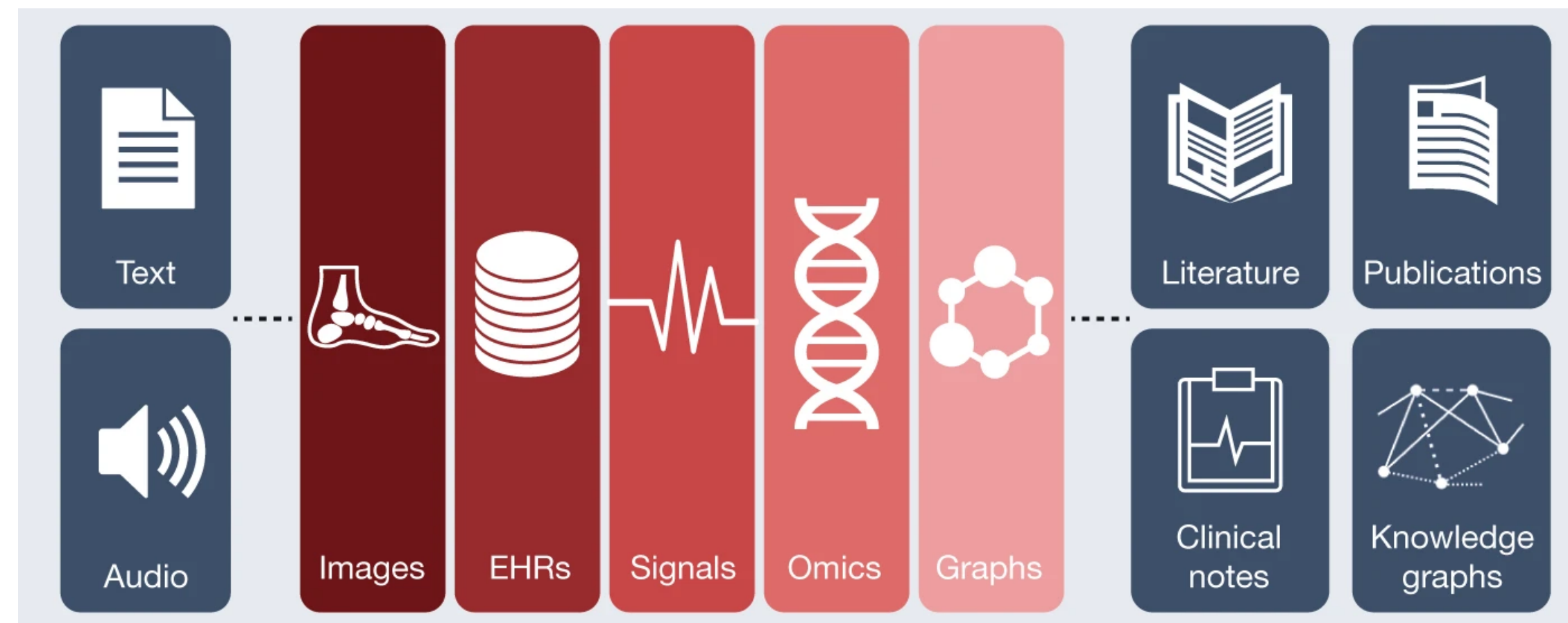
Multi-Modal AI in Medicine and Healthcare

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Seminar topics

- **Vision-language models (VLMs)** for medical and healthcare applications

- Generic **multi-modal AI models** (beyond vision and language)

- **Foundation models** for multi-modal medicine

- …

Pre-requisites

Expected:

- Mathematics basics (graduate level):
  - probability theory
  - linear algebra
  - calculus

- Machine / deep learning basics, e.g. having completed:
  - Machine Learning (IN2064)
  - Introduction to Deep Learning

Preferred:

- Knowledge in deep learning models in medicine, especially vision and/or language models

- Having completed:
  - AI in Medicine I
  - AI in Medicine II

- Work experience in AI / Data Science for Medicine & Healthcare

Semester Outline

Dates	Sessions
23.10.2024	Kick-off lecture: Scientific paper reading and presentation
30.10.2024	Background lecture: Multi-modal AI in medicine and healthcare
23.10.2024 - 6.10.2024	Paper selection
06.11.2024 - 11.12.2024	Presentations and reports

- **Please respond to this survey form in addition to your matching vote if you are signing up:**
  - **https://forms.gle/xTbgwcFf1ZeaDeXT7**
- Links and information will be on TUMOnline
- Time: 14:00 - 16:00, Wednesday *(TBC)*
- Location: Galileo 5th floor seminar room (Raum-Code: 8123.05.017) *(TBC)*

Other courses offered by our chair

- Practical Course: Applied Deep Learning in Medicine (https://aim-lab.io/theses/alexziller/practical)

- Master Seminar: Trustworthy AI for Medicine (IN2107, IN45048)

Any questions?