AI and Machine learning for health

Multimedia coding, systems and applications

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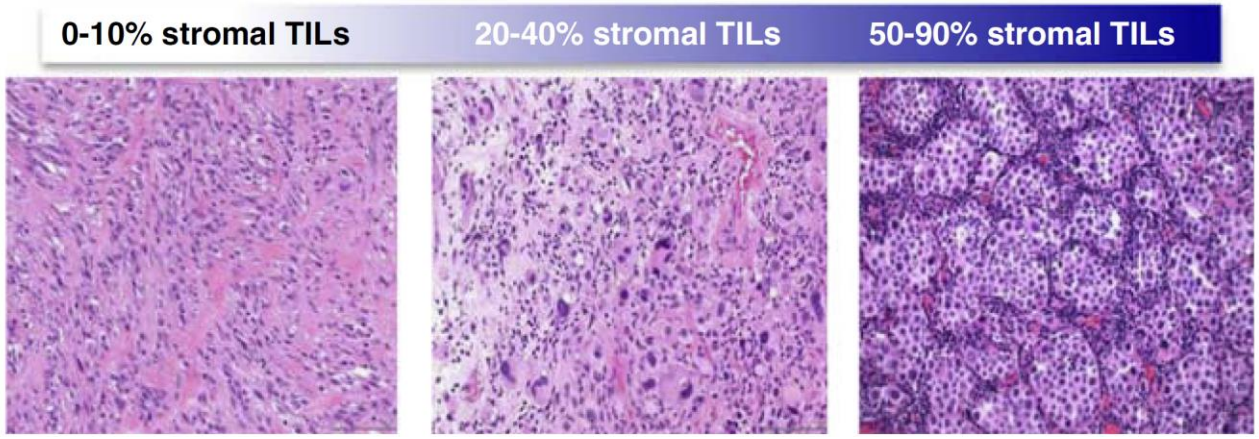
Artificial Intelligence (AI) for health

- AI for Health (AI4H) offers substantial improvements for public and clinical health; e.g.,
  - early detection,
  - diagnosis, and
  - risk identification;
  - treatment decision support;
  - self-management;
  - improved outcomes; …
- For worldwide adoption, need evaluation standards on effective AI for Health

Our first proof-of-concept benchmark: Diagnostic Support for Breast Cancer

- Tumor infiltrating lymphocytes (TILs) are implicated in eliminating tumor cells
- Quantification of TILs relevant for patient prognosis estimation and therapy
- Replace “eye-balling” by pathologist with Machine Learning
- Focus Group: specify process on data generation and evaluate accuracy of Machine Learning method



Data Quality Control

Considerations:

- Collection of training data
- Reproducibility of training data
- Statistical properties of training data
- Generation of reference data through experts
- Evaluation of data for machine learning systems
- ...

AI solution Quality Control

Quality Indicators

1. Performance measurement
2. Robustness
3. Uncertainty
4. Explainability
5. Generalizability
6. ...

Strategic direction to be taken by ITU-T

Collaboration with FGAI4H (WHO/ITU + IANPHI – International Association of National Public Health Institutes, Regulators, IAP – InterAcademy Partnership, AI4Good – AI for Good Global Summit, WHS – World Health Summit, Philanthropic Foundations)

Data: structure, quality standards

AI solutions: benchmarking standards

Questions for SGLA discussion

- Question 1 ?
- Question 2 ?
- Question 3 ?