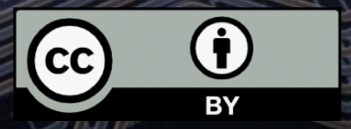
FAIR Data promotes science and technology research

dr. Ying Wang
Assistant professor
Biomedical Signals and Systems (BSS) group
EEMCS



About me

- Bachelor: Information and Electronic Engineering [China].
- Master: Computational Science in Engineering [Germany].
- PhD: Interdisciplinary project---Engineering+Science+Clinical fields.
  - Daily telemonitoring of patients with Epilepsy or Parkinson's disease using multimodal physiological signal analysis
  - the Netherlands: Radboud Uni & TU/e & Kempenhaeghe Research Center.
- Assistant professor at BSS-EEMCS: Daily telemonitoring of human health condition using multimodal physiological signal and system techniques.

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- FAIR: **F**indability, **A**ccessibility, **I**nteroperability, and **R**euse of digital assets.
- Publish an Open Dataset:
  - Early detection of chronic disease.
  - Individuals' health condition monitoring: body movement and physiological signals.
  - 14 healthy participants in the simulated daily-life environment (Techmed eHealth House).

Why FAIR Data?

- Start from my PhD project: Daily telemonitoring of patients with Epilepsy or Parkinson's disease using multimodal signal analysis.
- Huge cost in data acquirement, validation, and management.
  - Retrieve data from archived hospital database.
  - Acquire data from clinical trials or behavioural experiment.

Why FAIR Data?

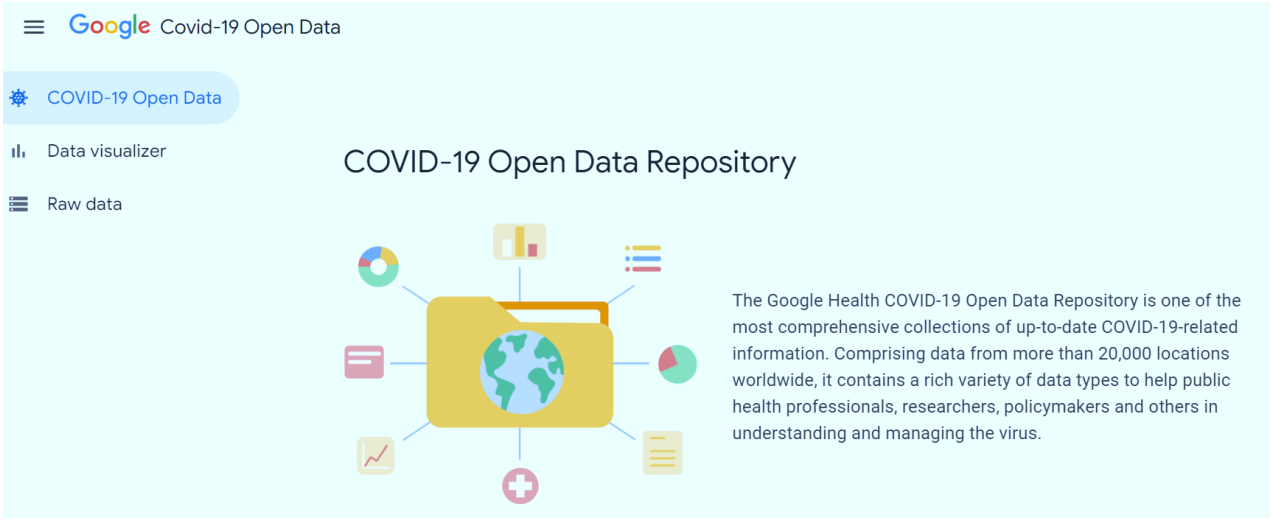
- Retrieve data from archived hospital database.
  - Difficulties in retrieving data: e.g., to organize and validate data collected by different company's devices and in different years.
- Acquire data from clinical trials or behavioural experiment.
  - Difficulties in acquiring data: e.g.,

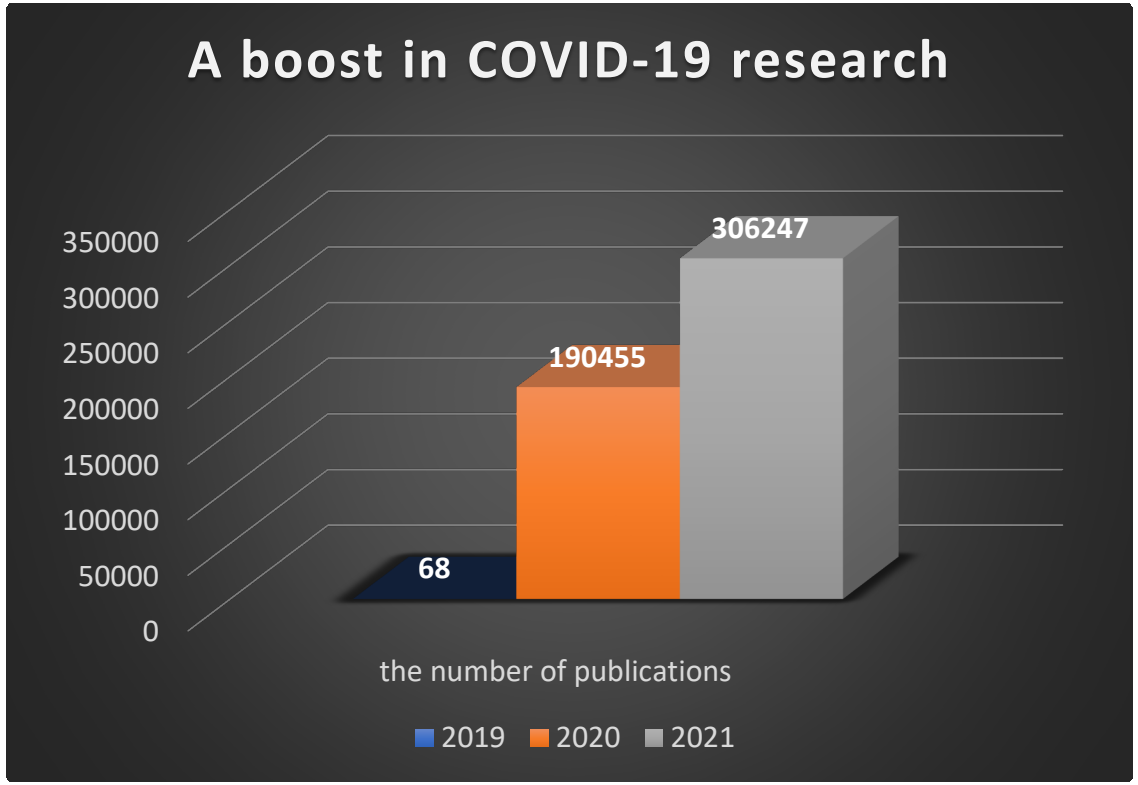
    METC application → several months,
    patients recruitment → several months,
    measurement design and setting-up → several months,
    data collections and organization …

FAIR Data improves the generalization of science and technology research

- Small datasets limit the generalization of science findings and technique applications.
- Especially, in the era of AI.
- Merge small datasets in a FAIR way → Improving Generalization

FAIR Data accelerates the science and technology research progress



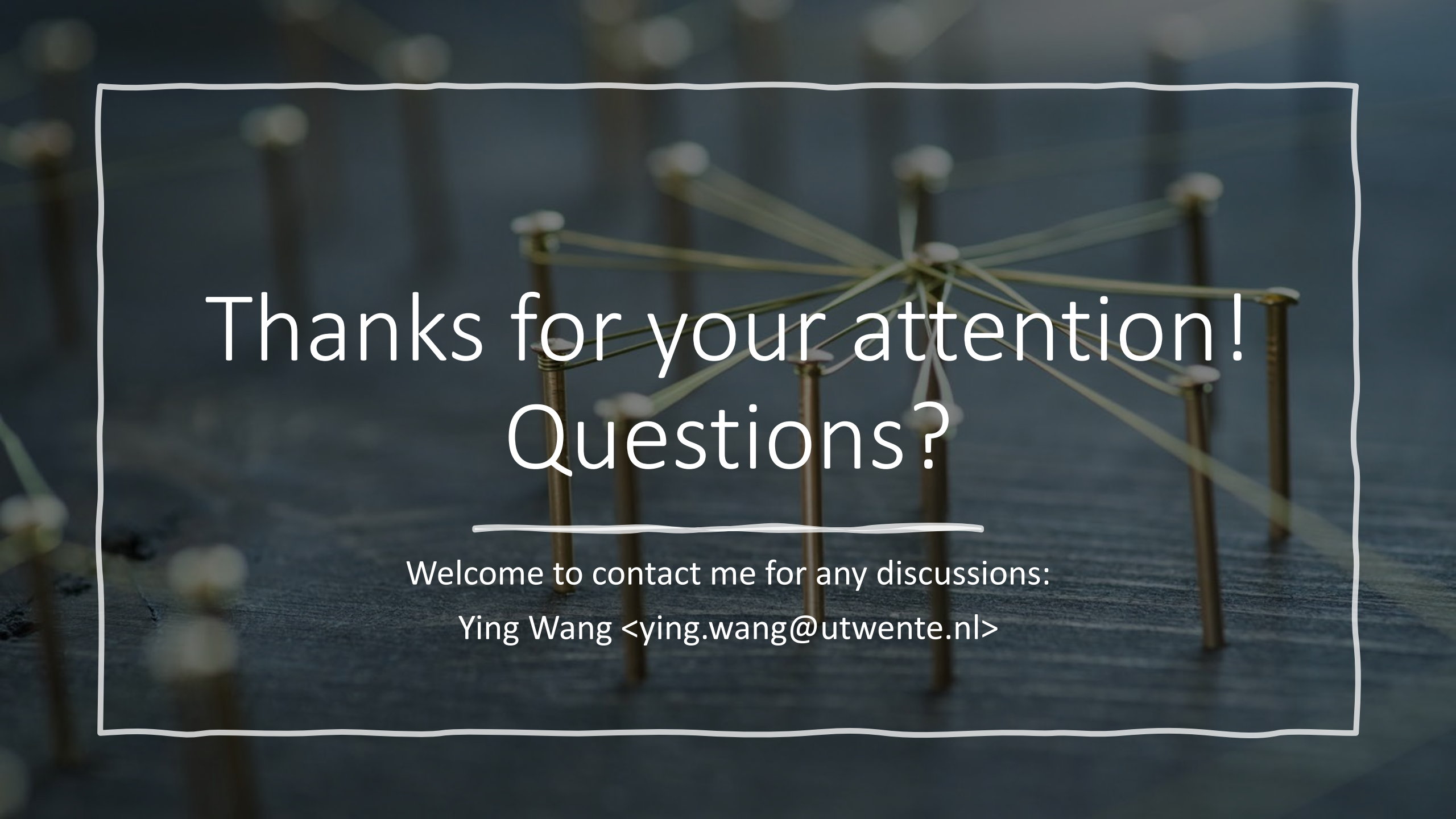


FAIR Data increases the impact of individual's science and technology research

- Share data with algorithms and/or statistical analysis steps
  - increase the reliability of our own research.
  - increase the opportunities to be the benchmark for other following studies.

Take home message

- Big effort in data acquirement, validation, and management.
- Data publishing in a FAIR way is essential to
  - improves the generalization of science and technology research.
  - accelerates the science and technology research progress.
  - increases the impact of individual's science and technology research.
- If you have any data for sharing, publish it in a FAIR way for the most usability.



Thanks for your attention! Questions?

Welcome to contact me for any discussions:

Ying Wang <ying.wang@utwente.nl>