

The COVID-19 Challenge: How to Fight Global Pandemics with Data and AI?

The COVID-19 pandemic has brought severe challenges on public health and further the human society. Though enormous information is streamed out every minute into open air, there lack efficient data analysis schemes facilitating the fight against the virus. We aim to bring our own contribution to handling the current situation and thereby launch a special subdivision of this semester's lab projects in the context of COVID-19 Open Research Dataset Challenge (CORD-19). Please find general information regarding open-source policy and awards under this [link](#).

You will be offered with a guided research tour from task selection towards implementation and result presentation. Cutting-edge machine learning and data mining techniques are to be proposed for hype topics regarding epidemiological study on COVID-19 pandemic using real data. More specifically, we list several topics that could be highly interesting for you as follows.

Potential Topics:

- Prediction on the number of infected based on time series analysis using machine learning.
- Geographic variations for virus spread based on spatio-temporal learning.
- Data acquisition, clustering as well as semantic analysis using natural language processing.
- Simultaneous crowd counting and temperature monitoring with deep neural networks.
- Epidemiological study with a focus on risk analysis and early warning based on deep knowledge graph.

We encourage students from diverse backgrounds (computer science, data science, mathematics, engineering or economics as well as business administration, etc.) to form hybrid teams and work jointly for different and specific tasks of the challenge. Intensive supervision and high-end facilities (e.g., work stations with GPUs for deep learning) are guaranteed.

Hints on the organizational matters: The projects will be launched under the scheme of *Praktikum* or *Seminar* of the Chair of Intelligent Sensor-Actuator-Systems (ISAS) with usual ECTS credits. However, initiative applications are always welcome as well. For more information, please visit our *project page* and contact the following persons.

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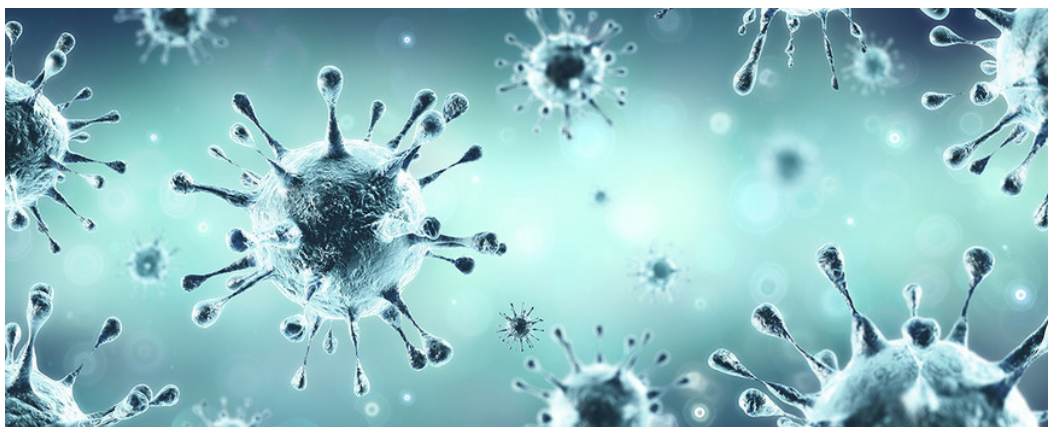


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