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Using social media data to identify spatial and behavioral indicators of disease transmission.

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Project description

Social media data have entered infectious disease epidemiology as novel sources of data to complement traditional infectious disease surveillance. The advent of online social media in the past few years has created new possibilities for measuring health behavior. Such services are used by millions of people who publicly share diverse aspects of their daily lives, including those related to health behavior. Furthermore, social media data sources, such as Facebook and Twitter enable linking human health and risk behaviors to geographic locations.

Without targeted interventions, clusters of unprotected individuals may increase the likelihood of disease outbreaks. Thus, online social media data may be harnessed to identify key areas for intervention efforts and to evaluate their effectiveness. During the COVID-19 pandemic, social media has been used to identify the main topics and concerns among users, or to uncover the spread of misinformation related to the pandemic. The use of social media data can be extended to identify people's attitudes, perceptions, and behaviors either towards the pandemic or in response to public health measures implemented throughout the pandemic.

The proposed project will leverage social media data from Germany using SARS-CoV-2 as a case study to define the attitudes, perceptions, and health behaviors towards the pandemic and their spatiotemporal characteristics to identify determinants of compliance with public health measures and participation in surveillance activities that are transferrable to other pathogens with epidemic/pandemic potential.

We are looking for a highly motivated medical student with a background in statistics. Prior work with time series /spatial data and experience using R are strongly desirable.

Cooperating partners: Heidelberg Institute for Information Technology (HeiGIT) and Heidelberg Institute of Global Health (HIGH)