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Multi-disciplinary data analysis of common psychological conditions

Jannik Schaaf
Goethe University Frankfurt, Germany

In a research project of the Frankfurt Big Data Lab, data scientist, machine learning experts and physicians are working on blending clinical data with additional, novel types and sources to improve the quality of patient-centric healthcare analytics. Data blending is defined as combining data from multiple sources, resulting in a unified view of the transformed data. Blended data sets come from very different domains, e.g. social media, academic records, criminal records or environmental data. For this challenge, we will have a core dataset of clinical data derived from an electronic health record (EHR) of the Geisinger Health System in Pennsylvania. They provided us about 170,000 anonymized unique patient records related to mood disorders. Mood disorders are a group of conditions, where the patient's mood is affected, e.g. depression, anxiety or bipolar disorder. Psychological mood disorders are often described as both social and medical phenomena. Recent studies in suicide prevention make connections between mood disorders and patterns in residential power use, logs of phone calls and purchasing history. The problem of screening for and predicting the risk of mood disorders in the general population has a major impact on population health. Our goal is to investigate if a combination of EHR data and other data sources could improve predicting the individualized risk for developing a mood disorder. But does using a larger volume and variety of data result in an improved understand of the underlying question? The questions remain to be answered in detail.

Biography

Jannik Schaaf is a PhD student at the Goethe University Frankfurt, Big Data Lab. He is employed at the Medical Informatics Group at the University Hospital Frankfurt and works on different projects in Data Integration and Machine Learning.

jannik.schaaf@kgu.de

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