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Using artificial intelligence to detect early signs of disease in old age

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In the study of diseases of the elderly, five different types of instruments are used, each of which alone does not allow a reliable diagnosis. In addition, tests and examinations are carried out by a doctor who makes his conclusion. Often the doctor's conclusion contradicts the data of computer diagnostics. In this communication, an attempt is made to construct a computer diagnostics system that allows solving a number of problems of previous approaches. First of all, to solve this problem, significant computing resources are required, which are not available in a conventional medical institution. Therefore, the first task that was solved at this stage was the anonymization of patient data and their transfer to a powerful server for further processing. One of the reasons that does not allow establishing more or less reliable data on diseases is the large number of gaps - the lack of data on one or another dimension for each individual patient. Therefore, the second task that is solved in our study is the restoration of empty spaces, the filling of gaps with the help of some reasonable procedure and the influence of this procedure on subsequent diagnostics. And the third task that we solved was the use of several diagnostic devices to detect the disease. For this purpose, statistical analysis of data obtained from a number of measurements, including fMRI, EEG and others, is used.

Summary

Primary authors: Mr DIK, Aleksandr (Saint Petersburg State University); BOGDANOV, Alexander (St.Petersburg State University); Mr EKIMOV, Alexander (Saint Petersburg State University); KIYAMOV, JASUR; Ms SHCHEGOL-EVA, Nadezhda (Saint Petersburg State University); Ms ZALUTSKAYA, Natalia (Federal state budgetary institution «Bekhterev National Medical Research Psychiatry and Neurology Center»,)

Presenter: Ms SHCHEGOLEVA, Nadezhda (Saint Petersburg State University)

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