The Janus Rehabilitation Predictor

A Novel Approach Applying Machine Learning to Vocational Rehabilitation

For oral presentation

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Long-term absence from work has been shown to often have a negative impact on various health problems and makes it difficult for individuals to return to work. Vocational rehabilitation (VR) is an approach suitable for many long-term unemployed and individuals on sickness benefit and is designed to give them a better chance of overcoming obstacles and re-entering the workforce. However, currently there is a shortage of scientifically validated tools to assess decline or change in any component that may influence the individual's VR for the rehabilitation team to react to.

Today Janus Rehabilitation Centre (JR) is one of the largest outpatient vocational rehabilitation centres in Iceland. JR is an interdisciplinary institution where professionals from different disciplines work together closely, assisting clients in achieving their goals. Since JR was established, it has accumulated a vast amount of data. Recent trends and progress in data mining and artificial intelligence enable us to exploit the data. Patterns in the rehabilitation process may predict likely outcomes and dropouts. JR has therefore developed new software that applies machine learning methods to analyze our database, named the JR-Predictor. This tool aids the team in recognizing warning signs from input entered into the database and when and how to intervene for the clients' benefit.

Although the predictor is a relatively new addition to JR's toolbox, the professionals' experience has been positive. This novel approach gives the interdisciplinary team insight into determining factors of the rehabilitation and gives them the possibility to intervene in a timely fashion. The predictor makes the team more aware of each client's needs and progress and gives an advantage in rehabilitation which may lead to better use of resources and reduce costs.