

Press release

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Basic information

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Department of: Clinical Medicine

Main supervisor: Ole Mors

Title of dissertation: Applying Machine Learning to Electronic Health Data - predicting mechanical restraint and suicide in a Danish cohort

Date for defence: 26 at (time of day): 10 Place: Auditorium J116-113, Entrance J, Aarhus University Hospital

Press release (Danish)

Anvendelse af maskinlæring på elektroniske sundhedsdata: Kan vi forudse bæltefiksering eller selvmord blandt psykiatriske patienter i Region Midt?

Bæltefiksering er en alvorlig hændelse, som kan forekomme under indlæggelse på psykiatriske afdelinger for at undgå, at patienten skader sig selv eller andre. Selv om der bruges mange ressourcer på at forebygge sådanne hændelsesforløb, kan de stadig være svære at forudse. Dette vanskeliggør en tidlig og effektiv forebyggende indsats.

Perioden umiddelbart efter udskrivelse kan være en højrisikoperiode for selvmord, men også disse tilfælde kan være meget svære at forudse. Det er derfor nødvendigt at få mere viden om, hvorledes vi kan identificere disse højrisikogrupper.

Et nyt ph.d. projekt fra Aarhus Universitet, Health undersøger hvordan maskinlæring kan anvendes på danske sundhedsdata til at identificere patienter i risiko for at blive bæltefikseret under indlæggelse eller begå selvmord efter udskrivelse. Projektet anvendte data fra de elektroniske patientjournaler i Region Midtjylland samt de danske sundhedsregistre. Under projektet blev det vist, at maskinlæring kan finde relevante mønstre, blandt andet i den elektroniske patientjournal, der kan bruges til at identificere patienter i risiko for bæltefiksering i de første døgn efter indlæggelsen. Undersøgelsen er gennemført af Andreas Aalkjær Danielsen, der forsvarede ph.d.-afhandlingen den 26/02

Forsvaret af ph.d.-projektet er offentligt og finder sted den 26/02 kl. 10.00 i auditorium J116-113, Aarhus Universitetshospital, Palle Juul Jensens Boulevard, Aarhus. Titlen på projektet er "Anvendelse af maskinlæring på elektroniske sundhedsdata: Kan vi forudse bæltefiksering og selvmord blandt psykiatriske patienter i Region Midt?". Yderligere oplysninger: Ph.d.-studerende Andreas Aalkjær Danielsen, e-mail: andreas.aalkjar.danielsen@clin.au.dk, tlf. 51364890.

Bedømmelsesudvalg:

Associate Professor Andreas Bak Schröder

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Translationale Psychiatrie, Klinik für Psychiatrie und Psychotherapie, Universitätsklinikum Münster, Tyskland

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Psykiatri, Aalborg Universitetshospital, Danmark

Press release (English)

Applying Machine Learning to Electronic Health Data

Mechanical restraint - i.e. restraining a patient to a bed using belts or straps - and suicide are two serious adverse events that can occur in relation to treatment at psychiatric departments. Much effort is used to prevent these events from occurring. However, such prevention is highly challenging, as both mechanical restraint and suicide are very difficult to predict.

In a new PhD project from Aarhus University, Health it is investigated how machine learning can be applied to health data to identify patients at risk for being subjected to mechanical restraint or to die by suicide. The project used data from the electronic health records used in Central Denmark Region and data from the Danish health registers. As part of the PhD projekt it was shown that machine learning could be used to find patterns that were important for identifying patients at risk for being subjected to mechanical restraint. The project was carried out by Andreas Aalkjær Danielsen, who is defending his dissertation on 26/02.

The defence is public and takes place on 26/02 at 10 am in auditorium J116-113, Aarhus University Hospital, Palle Juul Jensens Boulevard, Aarhus. The title of the project is "Applying Machine Learning to Electronic Health Data - predicting mechanical restraint and suicide in a Danish cohort". For more information, please contact PhD student Andreas Aalkjær Danielsen, email: andreas.aalkjar.danielsen@clin.au.dk, Phone +45 5136 4890.

Assessment committee:

Associate Professor Andreas Bak Schröder (chairman and moderator of the defence). The Research Clinic for Functional Disorders, Aarhus University Hospital, Denmark

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