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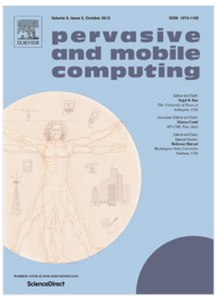

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Enrique Garcia-Ceja, Michael Riegler, Tine Nordgreen,
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Mental Health Monitoring with Multimodal Sensing and Machine Learning: A Survey

Enrique Garcia-Ceja[a,*], Michael Riegler[a,b], Tine Nordgreen[d], Petter Jakobsen[c,e], Ketil J. Oedegaard[f,g], Jim Tørresen[a]

[a] *Department of Informatics, University of Oslo, Oslo, Norway.*
[b] *Simula Metropolitan Center for Digital Engineering, Norway.*
[c] *Division of Psychiatry, Haukeland University Hospital, Bergen, Norway.*
[d] *Department of Clinical Psychology, Faculty of Psychology, University of Bergen, Bergen, Norway.*
[e] *Department of Clinical Medicine, University of Bergen, Bergen, Norway.*
[f] *NORMENT, Division of Psychiatry, Haukeland University Hospital, Bergen, Norway.*
[g] *K.G. Jebsen Centre for Neuropsychiatric Disorders, Department of Clinical Medicine, University of Bergen, Bergen, Norway.*

Abstract

Personal and ubiquitous sensing technologies such as smartphones have allowed the continuous collection of data in an unobtrusive manner. Machine learning methods have been applied to continuous sensor data to predict user contextual information such as location, mood, physical activity, etc. Recently, there has been a growing interest in leveraging ubiquitous sensing technologies for mental health care applications, thus, allowing the automatic continuous monitoring of different mental conditions such as depression, anxiety, stress, and so on. This paper surveys recent research works in mental health monitoring systems (MHMS) using sensor data and machine learning. We focused on research works about mental disorders/conditions such as: depression, anxiety, bipolar disorder, stress, etc. We propose a classification taxonomy to guide the review of related works and present the overall phases of MHMS. Moreover, research challenges in the field and future opportunities are also discussed.

*Corresponding author
Email address: enriqug@ifi.uio.no (Enrique Garcia-Ceja)