

**The 17th IEEE International Conference on Machine Learning and Applications
(IEEE ICMLA-2018)**

Special Session on Machine Learning Applications in Psychiatry

December 17-20, 2018, Orlando, Florida, USA

www.icmla-conference.org/icmla18

AIMS AND SCOPE

Psychiatric research entered the age of big data with patient databases now available with thousands of clinical, demographical, social, environmental, neuroimaging, genomic, proteomic and other -omic measures.

The analyses of such data is often more challenging than in other medical research areas because i) psychiatrists study traits which are not easily measurable; they need to be measured indirectly e.g. by questionnaires, ii) the definition of a mental disease is often very broad and often includes distinct but unknown subcategories, iii) there is a high proportion of drop-out in many studies and patients often do not adhere to the treatment, iv) treatment interventions often have several interacting and it is often difficult to measure components (complex interventions) and v) data is often not easily available, i.e. much medical and biomedical data is held in unstructured, textual form or is collected with mobile devices. Psychiatric research therefore presents special problems for researchers in addition to the standard methodological challenges, such as the number of variables exceeding the number of patients.

Machine learning techniques are increasingly being used to address problems in psychiatric and psychological research, including bioinformatics, neuroimaging, prediction modelling and personalized medicine, causal modelling, epidemiology and many other research areas. We would like to invite researchers from both academia and industry to participate in this workshop to present, discuss, and share the latest findings in the field, and exchange ideas that address real-world problems with real-world solutions, as well as to discuss future research directions. This special session is open to all interested persons. Topics relevant in this workshop include but are not limited to:

Applications of Machine Learning in

- Prediction models of differential treatment success (Personalized medicine)
- Development of diagnostic, risk and prognostic models, such as predicting risk of developing Alzheimer's, Dementia, etc
- Improving apparent validity of prediction models
- Methods for prediction and knowledge discovery from Electronic Health Record (EHR) data
- Adaptive clinical trials and machine learning

- Data retrieval using Natural Language Processing
- Causal modelling, including Mendelian Randomization
- Neuroimaging, EEG and ERP studies
- Bioinformatics and -omics studies
- Modelling selection bias in case-control studies
- Machine learning application to reduce the problem of selective inference and low reproducibility of research studies
- Methods for predicting from streaming activity and other data from wearable sensor data and real-time prediction methods (“mobile health”)
- Handling informative missing or censored outcome data
- Identifying subgroups of patients with schizophrenia, depression or other mental health problems

Submission Guidelines and Instructions

Papers submitted for reviewing should conform to IEEE specifications. Manuscript templates can be downloaded from [IEEE website](#). The maximum length of papers is 8 pages. All the papers will go through double-blind peer review process. Authors’ names and affiliations should not appear in the submitted paper. Authors’ prior work should be cited in the third person. Authors should also avoid revealing their identities and/or institutions in the text, figures, links, etc.

Papers must be submitted via the [CTM System](#) by selecting the track “**Special Session on Machine Learning Applications in Psychiatry**”. All accepted papers must be presented by one of the authors, who must register. Detailed instructions for submitting papers can be found at [How to Submit](#) .

Paper Publication:

Accepted papers will be published in the ICMLA 2018 conference proceedings (published by IEEE).

Important Dates:

Paper Submission Deadline **September 7, 2018**

Notification of Acceptance **October 7, 2018**

Camera-Ready Papers & Pre-registration: **October 17, 2018**

Special Session Chairs

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If you have any question about this session, please contact us at:

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