

MACHINE LEARNING FRAMEWORK FOR INFERRING LATENT MENTAL STATES FROM DIGITAL ACTIVITY (MILA)

Tech ID: 34136 / UC Case 2025-178-0

PATENT STATUS

Patent Pending

BRIEF DESCRIPTION

Scalable assessments of mental illness, the leading driver of disability worldwide, remain a critical roadblock toward accessible and equitable care. Researchers at UC Berkeley have introduced MAILA (MAchine-learning framework for Inferring Latent mental states from digital Activity), an innovation demonstrating that everyday human-computer interactions encode multiple dimensions of self-reported mental health and their changes over time. MAILA was trained to predict 1.3 million mental-health self-reports from 20,000 cursor and touchscreen recordings, identifying cognitive signatures of psychological function that go beyond what is conveyed by language. Key features and benefits include the ability to track dynamic mental states along three orthogonal dimensions, achieve near-ceiling accuracy in group-level predictions, and translate insights from general to clinical populations to identify individuals with self-reported mental illness.

SUGGESTED USES

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Computational Psychiatry: Providing objective, data-driven insights into latent mental states to supplement traditional clinical interviews.

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Precision Medicine: Tailoring individual mental health treatments based on dynamic, longitudinal digital behavior patterns.

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Public Health Monitoring: Deploying maximally scalable mental health assessments across large populations using existing digital infrastructure.

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Clinical Trial Support: Tracking real-time changes in mental states and psychological function during therapeutic interventions.

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Passive Screening: Identifying individuals at risk for depression or obsessive-compulsive disorder through routine device usage.

ADVANTAGES

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INVENTORS

» Whitney, David V.K.

OTHER INFORMATION

CATEGORIZED AS

» **Biotechnology**

» Bioinformatics

» **Computer**

» Software

» **Medical**

» Diagnostics

» Disease: Central Nervous System

» Screening

» Software

RELATED CASES

2025-178-0

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Passive and Reliable: Operates in the background of everyday digital activity without requiring active user input or self-reporting.

»

Maximally Scalable: Utilizes common human-computer interactions (cursor and touchscreen) available on billions of devices worldwide.

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High Accuracy: Achieves near-ceiling accuracy when predicting mental health at the group level.

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Non-Linguistic Insight: Captures psychological markers that are independent of language, providing a more direct measure of cognitive function.

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Clinical Generalizability: Successfully translates data from general online participants to specific clinical diagnoses like depression and OCD.

RELATED MATERIALS



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