



Department of Psychology
The University of Hong Kong
香港大學心理學系

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Departmental Seminar

Predicting Disorders of Affective Dysregulation Utilizing Machine Learning and Large Language Models



Ms Mengyuan Liu
PhD student
Department of Psychology
The University of Hong Kong

4:00p.m. – 5:00p.m.

Chamber, 11/F

The Jockey Club Tower

Centennial Campus

The University of Hong Kong

About the talk:

Affective dysregulation disorders like depression and anxiety impose substantial personal and societal burdens, yet underdiagnosis and limited access to care persist. Machine learning (ML) and large language models (LLMs) offer scalable, low-cost opportunities for early detection and risk assessment. Our studies find that LLMs, without fine-tuning, achieve performance on par with traditional ML in predicting depression and anxiety in adolescents one year ahead, using baseline behavioral and cognitive data from large cohorts. Moreover, in adults, key factors such as brooding, perceived loneliness, stress, and resilience form a mood vulnerability index that effectively identifies high-risk individuals. Additionally, EmoScan, an enhanced LLM system trained on 1,157 synthetic clinical interviews (PsyInterview), demonstrates superior accuracy in detecting both broad and fine-grained affective disorders, outperforming models like GPT-4 with strong interpretability and generalizability. These approaches highlight the potential of AI to support scalable screening, early risk prediction, and personalized intervention. Integrating clinical insight with computational tools paves the way for more accessible, timely, and effective mental health care.

About the speaker:

Mengyuan Liu (June) is a PhD candidate under the supervision of Professor Tatia M.C. Lee at the Laboratory of Neuropsychology and Human Neuroscience. June's research focuses on using computational approaches to identify vulnerability patterns of depression and anxiety.

Zoom Meeting (For participants who couldn't attend the Seminar in person)

<https://hku.zoom.us/j/6985555998?pwd=V05yTGJWNTIzazd2OFZ0Q3FRcHVkdz09>

Meeting ID: 698 555 5998 | Password: Psyc

~ All are Welcome ~

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