



Press Release – For Immediate Release

To: Assignment Editor/Editor of Education and Local News Sections

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HSUHK study harnesses AI to detect cyberbullying and promote online safety

A recent study by The Hang Seng University of Hong Kong (HSUHK) leverages privacy-aware data and large language models (LLMs) to understand cyberbullying in its wider conversational context, offering new possibilities for identifying such behaviour and building a safer online environment.

Led by Dr Carlin Chu, Assistant Professor in the Department of Computer Science at HSUHK, the research resulted in two related studies published in 2026. The first, “Privacy-Aware Code-Mixed Cyberbullying Dataset for Session-Based Analysis”, published in *Data* (volume 11, issue 3), introduces a publicly available dataset for studying cyberbullying in Chinese-English code-mixed conversations. The second, “Early Discovery of Cyberbullying Incidents in Multiparty Chinese-English Code-Mixed Colloquial Dialogue: A Generative AI Approach”, published in *Intelligent Systems with Applications* (volume 30, 2026), develops an LLM-based framework for detecting cyberbullying as harmful interactions emerge.

“When the project first began several years ago, the technology available was not capable of analysing complex online conversations involving multiple participants,” says Dr Chu. “Recent advances in large language models have made this work possible.”

This is particularly relevant in Hong Kong, where online communication frequently blends Cantonese, written Chinese, English and local internet slang. Conventional AI systems often struggle with such code-mixed language, while cyberbullying itself may be expressed through sarcasm, mockery or indirect attacks rather than explicit offensive words.

To address these challenges, the research team developed the Privacy-Aware Code-Mixed Cyberbullying Dataset, comprising more than 14,000 manually annotated posts organised into more than 1,600 conversation sessions collected from the social media platform X, formerly known as Twitter. The original collection contained hundreds of thousands of posts, with more than six months devoted to data collection, cleaning and annotation.

Rather than assessing individual posts in isolation, the researchers examined entire conversations involving multiple participants and exchanges. The LLM-based framework can identify victims, perpetrators and abusive interactions while considering how behaviour develops over time. This enables the system to recognise repeated targeting, indirect references and changing relationships that may be overlooked by message-level approaches.

The research also proposes a more structured way to assess cyberbullying severity, taking into account factors such as the frequency of abusive interactions, the number of perpetrators and the



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power imbalance between participants. Such analysis can help prioritise higher-risk cases for earlier human intervention.

Dr Chu also emphasises that AI is not intended to replace human judgement, noting, “AI can help identify potentially problematic content, but human review remains necessary because no automated system is perfectly accurate.” Online language also evolves rapidly, requiring datasets to be regularly updated and re-labelled.

The project demonstrates that privacy protection can coexist with effective AI research and in some circumstances, can improve model performance by reducing noise and bias in training data. Its findings could support future research and practical applications in education, social media safety and digital wellbeing.

Looking ahead, Dr Chu and his team plan to extend the research beyond text to images, memes and other multimodal content. “I hope that technology can play a role in reducing the harm caused by online bullying and contribute to a safer digital environment,” he says.

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Photo:



Photo caption: A recent study by HSUHK leverages privacy-aware data and large language models (LLMs) to understand cyberbullying in its wider conversational context, offering new possibilities for identifying such behaviour and building a safer online environment.

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About The Hang Seng University of Hong Kong

The Hang Seng University of Hong Kong (HSUHK) is a non-profit private liberal-arts-oriented university with six Schools (Business, Communication, Decision Sciences, Humanities and Social Science, Translation and Foreign Languages, and Transdisciplinary Studies), and around 9,000 full-time undergraduate and postgraduate students. With its unique “Liberal + Professional” education model, HSUHK nurtures caring professionals with a global vision and responsible leadership.

Aspiring to be a leading private university in the region, HSUHK prioritises stellar undergraduate education and research informed postgraduate education, supported by excellent student learning experience, impactful research and purposeful engagement. HSUHK places strategic importance on regional engagement and international partnership, which create a productive learning and research environment for students and scholars working creatively and innovatively with a strong interdisciplinary orientation.

HSUHK has earned various international recognitions. In the AppliedEdu’s ALL ASIA Private University Ranking 2026, it secured 7th place across Chinese Mainland, Hong Kong and Macau. HSUHK ranked 23rd in both Business and Management and Economics and Finance and 24th in Social Sciences and Humanities among this region’s top universities in the Research.com Top Universities and Top Scientists Rankings 2026. The MSc in Global Supply Chain Management programme achieved 84th place globally in the QS International Trade Rankings 2025. Additionally, HSUHK’s School of Business obtained AACSB International accreditation in 2023, a mark of excellence held by only 6% of the world’s leading business schools. HSUHK was also ranked among the top 200 worldwide on “Quality Education” and “Decent Work and Economic Growth” in the Times Higher Education University Impact Rankings 2021.