

## Keynote Speech 5 (10:15 to 11:00 HKT, 10<sup>th</sup> July 2024/D1-LP-02)

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### Detecting Dis-information via Artificial Intelligence Dashboards

#### Abstract

Fake news can kill. Some believed Covid-19 fake news, rejected vaccines, got infected, and died. Others believed stolen USA presidential election tweets, stormed the Congress barricades, and died. Integrating four theories (*formal linguistics, politeness, information market, situational theory of problem solving*) yields *deceptive writing tactics* theory. We test this theory on 4,165 Covid-19 tweets and 31,128 “stolen election” tweets by combining several methods (*machine learning, computational linguistics, multilevel diffusion analysis*). Tweets with first person singular pronouns or third person pronouns were often true, but tweets that were rude or with second person pronouns were often false. Effects of common words, emotions, and hedges differed across topics. Unlike true tweets, false tweets started earlier, spread faster, and spread further via greater broadcast influence (e.g., Trump tweet) and greater word-of-mouth influence. Synthesizing these theories, methods, and results into our artificial intelligence dashboards helps students, organizations and governments detect and combat fake news.

#### Biography

Ming Ming CHIU is *Chair Professor of Analytics and Diversity* and *Analytics\Assessment Research Center Director*, The Education University of Hong Kong. A graduate of Columbia (BS, computer science), Harvard (EdM, interactive technology) and UC-Berkeley (PhD, education), he advises China’s Ministry of Education and Qatar’s Ministry of Education. He invented (a) *statistical discourse analysis* to model online and face-to-face conversations (best 50 learning science ideas – *International Society of the Learning Sciences*), (b) *multilevel diffusion analysis* to detect corruption in the music industry and how ideas/behaviors spread through populations, (c) artificial intelligence *Statistician*, and (d) online detection of sexual predators. His 85 grants (US\$21 million) yielded 294 publications (202 journal articles; 16,000+ citations; #8 in Education in China, 2023), 17 keynote speeches, 5 television broadcasts, 17 radio broadcasts, and 189 news articles in 22 countries. He creates and applies automatic statistical analyses to Big Data.

