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SPECIAL ANNIVERSARY ISSUE

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Can AI tackle fake news and challenging medical conditions?

K.P. (Suba) Subbalakshmi

To address critical economic, security and public health issues that arise from widespread misinformation (e.g., COVID-19 misinformation), electrical and computer engineering professor and founding director of the Stevens Institute for Artificial Intelligence K.P. (Suba) Subbalakshmi is developing an explainable AI framework to detect fake news from social media content.

The software analyzes posts and source profiles for such features as vocabulary complexity, emotion, imagery and follower count. Incorporating human observations with computer-identified patterns, Subbalakshmi's best-performing prediction model outperformed 11 rumor-detection algorithms for accuracy. Early findings were presented at the 2020 Association for Computing Machinery's Knowledge Discovery and Data Mining TrueFact workshop.

The engine's modularity and transparency help researchers fine-tune their approach while building trust in the system. Her team has also begun incorporating image analysis, a particular challenge because authentic photos may be rendered false by the context in which they are presented.

Subbalakshmi is applying similar methods to detect certain medical conditions, which may help shape future clinical trials or patient care.

By analyzing language from non-clinical patient conversations, she has identified previously unreported features that may indicate early-stage cognitive impairment from Alzheimer's disease. Results have been accepted for publication in the BIOKDD 2020 conference proceedings

Similarly, her team is analyzing Reddit posts to determine whether linguistic characteristics indicate the presence and stage of clinical depression. — *Kellie Walsh*