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*Forecasting Seasonal Influenza Using Google Trends and Health-Seeking Behavior*

Timely and accurate influenza forecasts are crucial for public health planning. In this talk, I will present a hybrid modeling approach that uses Google Trends data and historical health-seeking behavior to forecast seasonal flu activity. Our two-step method first predicts behavioral patterns with machine learning, then incorporates these forecasts into a mechanistic SIR model to forecast influenza trends. Results show that combining real-time internet search data with behavioral trends improves forecast accuracy, especially around peak seasons. This approach highlights the value of integrating digital and historical signals for enhanced infectious disease forecasting