Information Retrieval Framework Based on Social Media Network Connections
AzTE Case #M15-070P

Background
People frequently use social media to find information that may not be readily available from search engines or to request input from their peers. However, the search technology built into conventional social media platforms is not designed for information retrieval purposes. Since content is not archived, it is difficult to find answers to similar questions that have already been asked, and since content is produced very frequently, these past questions and answers can be buried under a mountain of postings. Current techniques match question content to user profile information or use crowdsourcing, which can frequently source information from irrelevant connections and rely on user voting to rate the quality of responses. Therefore, further developments in social media searches are necessary to improve answer ranking and increase user satisfaction.

Invention Description
Researchers at ASU have designed algorithmic framework for identifying the best answers to social media questions by the value derived from network connections and content information. The framework leverages social foci theory to determine the context of the relationship between an asker and an answerer. Social foci theory assumes that answerers who are connected to communities or are part of interest groups most relevant to a question’s content, are best suited to produce a valuable answer. Answerers are ranked according to how well-suited they are to answering the question, and their ranked set of answers is returned to the asker. This framework offers a more robust approach to overcoming the subjective nuances within personalized question content, and provides automated quality control to social media searches.

Potential Applications
- Information Retrieval
- Social Media Searches

Benefits and Advantages
- **Automation** – Ranks answers based on the relevance of an answerer’s social ties with respect to the content of the question.
- **Performance** – Improves quality of responses through social foci theory.
- **Reliability** – Robust to a wide range of networks, content, and categories of social media questions.