INFORMATION OF THE DOCTORAL THESIS

Thesis title:

RESEARCH ON DEVELOPING A USER TRUST MODEL BASED ON INTERACTION AND SEMANTICS OF MESSAGES ON SOCIAL NETWORK

Field of Study: Information Systems

Code: 9.48.01.04

Phd Candidate: Pham Phuong Thanh

Scientific Supervisor: Assoc. Prof. Dr. Tran Dinh Que

Academic Institution: Posts and Telecommunications Institute of Technology

NOVEL CONTRIBUTIONS OF THE DISSERTATION:

1) The foremost contribution of this dissertation is the introduction of several methods for calculating direct trust between two users, grounded in their interaction history and shared interests concerning a specific topic.
2) The second contribution involves the development of a method for estimating user similarity by integrating content-based similarity with interest-based similarity. This is achieved through the application of natural language processing techniques and vector representations of topics and articles.
3) The final contribution of this dissertation is the proposal of a family of reputation-based trust models, encompassing reputation trust derived from algebraic paths and reputation trust based on similarity. Building on these models, the dissertation constructs an overall trust metric by synthesizing trust from both interaction history and reputation-based trust mechanisms.

POTENTIAL APPLICATIONS, PRACTICAL IMPLICATIONS, AND OPEN RESEARCH QUESTIONS FOR FURTHER STUDY

This dissertation investigates and develops user trust models for social networks, making the research outcomes applicable to fostering connections, relationships, and transactions among users within online communities, social networks, and e-commerce platforms. By leveraging these models, the risks associated with user interactions on social networks can be mitigated. Furthermore, the analyses and findings presented in this work can be utilized for teaching and research purposes in academic institutions.

Future research directions stemming from this dissertation include investigating trust models that incorporate temporal parameters to evaluate the evolution of users' interests; exploring the extension of the models to address issues related to malicious users and factors that may disrupt trust computation; and integrating trust models into systems such as recommendation engines. This represents a highly promising application of trust models, as it can enhance the accuracy and reliability of recommendations provided to users in such systems.

Confirmation of Scientific supervisors **PhD candidate**

Assoc.Prof.Dr. Tran Dinh Que **Pham Phuong Thanh**