Risk Models for Trust-Based Access Control(TBAC)

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Abstract

The importance of risk in trust-based systems is well established. This paper presents a novel model of risk and decision-making based on economic theory. Use of the model is illustrated by way of a collaborative spam detection application.

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References

1. Cahill, V., et al.: Using trust for secure collaboration in uncertain environments. IEEE Pervasive Computing 2, 52–61 (2003)

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2. Dimmock, N.: How much is ‘enough’? Risk in trust-based access control. In: IEEE International Workshops on Enabling Technologies: Infrastructure for Collaborative Enterprises — Enterprise Security, pp. 281–282 (2003)

Google Scholar

3. Knight, F.H.: Risk, Uncertainty, and Profit. Library of economics and liberty, Hart, Schaffner & Marx edn., September 8. Houghton Mifflin Company, Boston (1921)

Google Scholar

4. Hirshleifer, J., Riley, J.G.: The analytics of uncertainty and information. In: Cambridge surveys of economic literature. Cambridge University Press, Cambridge (1992)

Google Scholar

5. von Neumann, J., Morgenstern, O.: Theory of Games and Economic Behavior, 2nd edn. Princeton University Press, Princeton (1947)

Google Scholar

6. Dimmock, N., Belokosztolszki, A., Eyers, D., Bacon, J., Moody, K.: Using trust and risk in role-based access control policies. In: Proceedings of Symposium on Access Control Models and Technologies. ACM, New York (2004)

Google Scholar

7. Machina, M.J.: Choice under uncertainty: Problems solved and unsolved. The

Journal of Economic Perspectives 1, 121–154 (1987)

Google Scholar

8. Simon, H.A.: Models of bounded rationality, vol. 1. MIT Press, Cambridge (1982)

Google Scholar

9. Savage, L.J.: The foundations of statistics, 2nd edn. Dover, New York (1972)

MATH Google Scholar

10. Carbone, M., Dimmock, N., Krukow, K., Nielsen, M.: Revised computational trust model. EU IST-FET Project Deliverable (2004)

Google Scholar

11. Dimmock, N., Maddison, I.: Peer-to-peer collaborative spam detection. ACM Crossroads 11 (2004)

Google Scholar

12. cmeclax: Nilsimsa codes (2004), http://ixazon.dynip.com/~cmeclax/nilsimsa.html (accessed November 22, 2004 17:30 UTC)

13. Jøsang, A.: A logic for uncertain probabilities. International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems 9 (2001)

Google Scholar

14. Abdul-Rahman, A., Hailes, S.: Supporting trust in virtual communities. In: Hawaii International Conference on System Sciences 33, pp. 1769–1777 (2000)

Google Scholar

15. Douceur, J.R.: The sybil attack. In: Druschel, P., Kaashoek, M.F., Rowstron, A. (eds.) IPTPS 2002. LNCS, vol. 2429, pp. 251–260. Springer, Heidelberg (2002)

Chapter Google Scholar

16. Jøsang, A., Presti, S.L.: Analysing the relationship between trust and risk. In: Jensen, C., Poslad, S., Dimitrakos, T. (eds.) iTrust 2004. LNCS, vol. 2995, pp. 135–145. Springer, Heidelberg (2004)

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