

第5回 IFIP トラストマネージメント国際会議参加報告

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あらまし 本稿では2011年6月27日から7月1日の間、デンマーク・コペンハーゲンで開催された第5回 IFIP トラストマネージメント国際会議 (5th IFIP WG11.11 International Conference on Trust Management) に関して報告する。

Report on the 5th IFIP WG11.11 International Conference on Trust Management

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Abstract This paper reports on the 5th IFIP WG11.11 International Conference on Trust Management (IFIPTM 2011) and corresponding workshops, held from June 27 to July 1, 2011 in Copenhagen, Denmark. IFIPTM 2011 focuses on trust models, social and behavioral aspects of trust, trust in networks, mobile systems and cloud computation, privacy, reputation systems, and identity management. In this report, we first introduce the history and objective of this conference, then present the basic information of this year's conference, and the workshops. After that, several selected keynote speeches and papers are briefly discussed. At last, the committees' plan for next year's IFIPTM2012 conference is introduced.

1 Introduction

As a P.h.D. student, I attended the 5th IFIP WG11.11 International Conference on Trust Management (IFIPTM 2011) and corresponding workshops [1], which is held from June 27th to July 1st at the Technical University of Denmark (DTU) [2] in Copenhagen, Denmark. In this paper, the information of this conference and workshops will be introduced.

During the past decade, trust management [3] has provided cogent answers to emerging challenges in the global computing infrastructure relating to computer and network security, electronic commerce, virtual enterprises, social networks and cloud computing. During this time, the IFIP WG 11.11 on trust management has established itself as the leading community of researchers working on trust management issues. The mission of the IFIPTM Conference is to share research solutions to problems of Trust and Trust management, including related Security and Privacy issues, and to identify new issues and directions for future research and development work.

2 IFIPTM History

2.1 IFIPTM 2007

The first IFIPTM conference was held in 2007 in Moncton, New Brunswick, Canada [4], as joint iTrust and PST conferences on privacy, trust management and security. Before IFIPTM 2007, the conference PST was originally started from 2003 in Montreal, Quebec, Canada, and after that, every year held in different cities in Canada. The conference iTrust was started from 2003 in Crete, Greece. After that, held in 2004 in St. Anne's College, Oxford, UK [5]; 2005 in Rocquencourt, France; and 2006 in Pisa, Italy [6]. The IFIP 2007 general chairs are Sandro Etalle [8] and Stephen Marsh [7].

2.2 IFIPTM 2008

The second IFIPTM is held in June 2008, Trondheim, Norway. The two general chairs were Peter Herrmann and Christian Damsgaard Jensen. The program chairs were Yucel Karabulut and John Mitchell. The workshop and tutorial chairs were Elisa Bertino and Dan Lin.

2.3 IFIPTM 2009

The third IFIPTM was held in June 2009, Purdue University, West Lafayette, USA. The general chairs were Elisa Bertino, and Yucel Karabulut. The tutorial chair was Yuko Murayama [10].

2.4 IFIPTM 2010

The fourth IFIPTM is held in Morioka, Iwate, Japan [11]. It is the first time this conference held in Asia country. The IFIPTM 2010 was held from June 16 to 18, 2010, in cooperation of the Information Processing Society of Japan (IPSJ), supported by Japan Society for the Promotion of Science (JSPS), National Institute of Information and Communication Technology (NICT), Information Technology Promotion Agency (IPA) and Iwate Prefectural University (IPU), Japan. The Iwate city is a small and quiet castle town, with old temples and shrines, often compared to Kyoto. In the conference, there were about more than 100 attendees from more than 17 countries. The program chairs were Audun Josang [13] and Masakatsu Nishigaki [14]. The general chairs were Yuko Murayama and Stephen Marsh.

In Table.1 we summarize the statistical data for the IFIPTM conferences from 2007 to 2011, including the conference places, number of submissions, number of different submission countries, number of accepted papers and the acceptance ratios.

表 1: Paper Acceptance Ratio of IFIPTM 2007-2011

Year	Place	Submit	Country	Accept	Acceptance Ratio
2007	Canada	76	25	25 Regular+5 Invited+4 Short	32.9% (38.2%)
2008	Norway	62	/	22 Regular+2 Invited+3 Demo	35.5% (40.3%)
2009	USA	44	/	17 Regular+1 Invited+5 Demo	38.6% (45.5%)
2010	Japan	61	25	18 Regular+2 Invited+4 Demo + 22 Short + 9 Poster	29.5%
2011	Denmark	42	21	14 Regular+4 Invited +8 Short	33.3% (52.4%)

3 Summer School

This year, one week before the main conference and workshops, during 20-24 June 2011, IFIP WG11.11 organized a summer school on trust management. The summer school allowed participants in the summer school to receive a comprehensive and up-to-date understanding of computational trust and trust management. In the summer school, The following lectures had been given: 1). Computational trust by Stephen Marsh from CRC, Canada; 2). Formal models of trust by Vladimiro Sassone from University of Southampton, U.K; 3). Risk and trust by Ketil Stolen from SINTEF ICT, Norway; 4). Trust and security by Christian D. Jensen from DTU, Denmark; 5). Reputation systems by Audun Josang from University of Oslo, Norway.

4 IFIPTM 2011 Conference

The IFIPTM 2011 main conference, and its joint workshops, were held at the Technical University of Denmark (DTU) in Copenhagen, Denmark. The venue for the conference was the DTU Meeting Centre in Building 101A, Anker Engeldsvej 1, Kgs. Lyngby, Denmark. The workshops were prior to the main conference, and held on 27th and 28th June, 2011. And the main conference was held from 29th June to 1st July, 2011.

4.1 Main Conference Information

The IFIPTM 2011 conference featured both theoretical research papers and reports of real-world case studies from academia, business and government. This year, the IFIPTM 2011 main conference was held during June 29 to July 1, 2011. The main conference received 42 submissions from 21 different countries, including: Canada, Denmark, Finland, France Germany, India, Israel, Italy, Japan, Kuwait, Luxembourg, The Netherlands, Norway, Portugal, Saudi Arabia, Singapore, Slovenia, Switzerland, UK, United Arab Emirates, and USA. Finally, 14 full papers and 8 short papers were

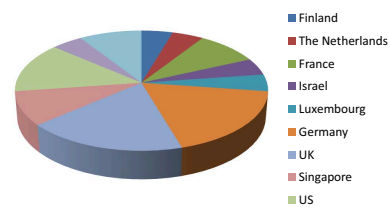


图 1: Accepted paper distribution

accepted. The acceptance ratio was 33.3%. Fig.1 illustrates the country distribution of all the accepted papers in IFIPTM 2011. The IFIPTM 2011 accepted papers feature both theoretical research and real-world case studies from academia, business and government focusing on areas such as: trust models, social and behavioral aspects of trust, trust in networks, mobile systems and cloud computa-

tion, privacy, reputation systems, and identity management.

The main conference lasted for three days, and the sections include: keynote speeches, trust models, trust and clustering, privacy, short paper sessions. As well, the working group of IFIPTM discussed about the future development plan and objective of this conference. At last, the conference attendees farewelled with each other and the chairman made a presentation of venue for IFIPTM 2012.

4.2 IFIPTM 2011 Papers

In the main conference, all the papers accepted were presented by the authors, as well, posters were demonstrated by other researchers. In the following part, we selectively introduce four representative papers that have been accepted and presented in the conference.

a). *From Access Control to Trust Management, and Back - A Petition [Dieter Gollmann]*

In this invited talk, prof. Dieter Gollmann[12] analyzes the relationship between the trust management and traditional access control. He reviewed the history of trust management, investigates the internal relationship of trust management and authorization, and compares all the features that trust holds with traditional access control. He views trust as only a placeholder that had its use in driving the research of access control, but argues that trust is so overloaded, and it is now an impediment for further progress of the research in access control. Therefore, in this paper, prof. Gollmann asks for a return to access control and propose a new framework for structuring investigations in this area [15].

b). *On Trade-offs between Trust and Survivability Using Game Theoretic Approach [Jin-Hee Cho et.al]*

In this paper, the authors investigate the military communication in tactical networks. They utilize the trustworthiness to maintain

the insider members in the military communication network. The authors regard the group trust of the insider nodes as more important than trust of an individual entity since it may significantly affect successful mission completion. Moreover, the authors introduces a game theoretic approach to improve group trust by encouraging the insider nodes to meet unanimous compliance with a group protocol. Furthermore, inspired by aspiration theory in social sciences, the authors adjust an expected system trust threshold level that should be maintained by all participating entities to effectively encourage the insider nodes to do benign behaviors [16].

c). *A Trust Management Framework for Detecting Malicious and Selfish Behavior in Ad-Hoc Wireless Networks Using Fuzzy Sets and Grey Theory [Ji Guo et.al]*

The authors develop a new trust management framework for wireless networks. The proposed framework applies Grey theory combined with Fuzzy Sets to calculate insider nodes' trust value based on observations from the neighbor insider nodes. Simulation show that the proposed framework can not only identify abnormal trust behaviors, but also effectively find which aspect of an insider node are abnormal, and identify the strategy the attacker uses [17].

d). *Taste and Trust [Audun Josang et.al]*

The authors try to find some interesting relationship between people's taste and the social trust. They state that trust and taste are closely related, and it is necessary to take differences in taste into account when analyzing trust networks. They argue that trust and taste are specific types of the more general concepts of belief or opinion with a given semantic scope, so that trust networks can be generalized as semantic opinion networks. The analysis of trust networks can be therefore be generalized to the analysis of semantic opinion networks. In such networks it is possible

and necessary to take differences in taste and preferences into account for modeling, analysis and decision making. This has important implications such as the collaborative management of knowledge [18].

5 IFIPTM 2011 Workshops

The IFIPTM2011 joint workshops were held during June 27 to June 28, 2011. The workshop place was also in Technical University of Denmark. There were totally five thematic workshops and a full day Tutorial. These events provided valuable and relaxed forums for discussing ideas, reviewing current trends in the Trust Management community and, more importantly, networking with peers and establishing future collaborations. The workshops and the Tutorial are illustrated below.

5.1 STM2011

7th International Workshop on Security and Trust Management (STM2011) was held on June 27-28 2011. STM is working group of ERCIM (European Research Consortium in Informatics and Mathematics), and was established in 2005 to provide a platform for researchers in security and trust management to discuss and to foster cooperation. The STM workshop is held every year. This year, 33 papers were submitted, and 12 papers were accepted. The acceptance ratio is 35%. The STM2011 workshop lasted for two days, and there were four different sessions:

- 1). Architecture and Protocols .
- 2). Integrating Trust .
- 3). Access Control .
- 4). Authentication and Authorization .

5.2 PriMO 2011

1st International Workshop on Privacy Management in Mobile Applications (PriMO 2011)

was held on the 27th June 2011 in DTU. This workshop was supported by the PRiMMA (Privacy Rights Management in Mobile Applications) project. PRiMMA project was a collaboration between Open University and Imperial College London. The papers accepted by this workshop covers the research fields including user privacy perceptions and evaluations of user experiences with control mechanisms; explorations of requirements elicitation techniques and definitions of privacy models and rules; and designs of privacy aware and user controllable privacy platforms. In this workshop, six accepted papers were presented.

5.3 INTRUSO and NODES 2011

1st International Workshop on Trustworthy Service-Oriented Computing (INTRUSO 2011), and 5th Nordic Workshop on Dependability and Security (NODES 2011) were held on June 27-28, 2011. INTRUSO and NODES 2011 aimed at providing a forum for researchers and practitioners interested in different aspects of dependability and security to exchange ideas and current research results. In these two joint workshops, there were totally thirteen papers presented. And these two workshops consist of four sections:

- 1). Trust and Web Services.
- 2). Dependability and Formal Methods.
- 3). Dependability and Trust.
- 4). Security Session.

5.4 TP-DIS 2011

1st Trust and Privacy in Distributed Information Sharing (TP-DIS 2011) was held on 27th June, 2011. This workshop sought to explore the issues of trust, rating , privacy, reputation, filtering and so forth as means of

establishing and re-enforcing trusted, privacy-preserving reliable information exchange in decentralized computing environments as well as relevant trust models for privacy integrating issues from computational theory to sociological implications, from systems implementation to usability. In this workshop, three papers were presented. The paper “Privacy preserving weighted Slope One predictor for Item Based Collaborative Filtering” [19] authored by Dr. Anirban Basu and Prof. Hiroaki Kikuchi was also introduced in this workshop.

6 Preview of IFIPTM2012

At the last day of IFIPTM 2011 conference, the committees introduced the information of IFIPTM 2012. The IFIPTM 2012 will be held in National Institute of Technology (NIT) in Surat, India. The conference time will be May 21st - 24th, 2012. And the registration fee will be around 350 Euro. The IFIPTM 2012 will get support from India government, and also from India research institutes such as IIT, MIS, ISI, NIT, CDAC, DRDO and ISRD.

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