

## **Publication list of professor Sasu Tarkoma**

**2 May 2020**

### **Monographs and Books (Category C: Scientific Books)**

1. S. Tarkoma. Mobile Middleware: Architecture, Patterns, and Practice. Wiley, March 2009. 320 pages. Textbook for a mobile middleware course.
2. S. Tarkoma. Structures for Overlay Systems: Towards Information Networking. 250 pages. Textbook for an advanced course. February, 2010. CRC Press/Auerbach.
3. S. Tarkoma. Publish/Subscribe Systems: Design and Principles. August 2012. Wiley.
4. S. Tarkoma, M. Siekkinen, E. Lagerspetz, Y. Xiao. Smartphone Energy Consumption: Modeling and Optimization. Cambridge University Press, August 2014.
5. S. Tarkoma. Efficient Content-based Routing, Mobility-aware Topologies, and Temporal Subspace Matching. Ph.D Thesis. University of Helsinki, Department of Computer Science, April 2006.

### **Journal Papers (Category A: Peer-reviewed scientific articles)**

6. S. Tarkoma and J. Kangasharju. Optimizing Content-based Routers: Posets and Forests. Distributed Computing 19 (1), September 2006.
7. S. Tarkoma and J. Kangasharju. On the Cost and Safety of Handoffs in Content-based Routing Systems. Computer Networks 51(6): 1459-1482, 2007.
8. J. Kangasharju, T. Lindholm, and S. Tarkoma. XML Messaging on Mobile Devices: From Requirements to Implementation. Computer Networks 51 (16), November 2007.
9. S. Tarkoma, C. Prehofer, S. Sovio, P. Laitinen. Composable Mediation for Security-aware Mobile Services. IEEE Communications Magazine special issue on Web Services in Telecommunications. Volume 45, Issue 7, July 2007.
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11. J. Kangasharju, T. Lindholm, and S. Tarkoma. XML Security with Binary XML for Mobile Web Services. International Journal of Web Services Research 5 (3), July 2008.
12. S. Tarkoma. Dynamic Filter Stream Detection and Merging for Publish/Subscribe. Elsevier Pervasive and Mobile Computing (Fast Track paper). 2008. Volume 4, Issue 5, Pages 579-788 (October 2008).

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14. T. Lindholm, J. Kangasharju, S. Tarkoma. Syxaw: Data Synchronization Middleware for the Mobile Web. Mobile Networks and Applications (MONET). Volume 14, Number 5, October 2009. Pages 661-676.
15. C. Prehofer, J. van Gorp, V. Stirbu, S. Satish, S. Tarkoma, C. di Flora, P. Liimatainen. Practical Web-based Smart Spaces. IEEE Pervasive Computing 9(3): 72-80, 2010.
16. S. Tarkoma, E. Lagerspetz. Arching Over the Mobile Chasm: Platforms and Runtimes. IEEE Computer 44(4): 22-28, 2011.
17. S. Tarkoma, C. E. Rothenberg, E. Lagerspetz: Theory and Practice of Bloom Filters for Distributed Systems. IEEE Communications Surveys and Tutorials 14(1): 131-155, 2012.
18. Y. Cui, W. Hu, H. Wang, D. Chen, S. Tarkoma, A. Ylä-Jääski. Probabilistic Multi-path Routing for Multimedia Over Wireless Mesh Networks. Ad Hoc & Sensor Wireless Networks 14(3-4): 205-225, 2012.
19. S. Aalto, P. Lassila, P. Savolainen, and S. Tarkoma. How Impatience Affects the Performance and Scalability of P2P Video-on-Demand Systems. ACM SIGMETRICS Performance Evaluation Review, 39(3), 2011.
20. W. Rao, L. Chen, S. Tarkoma. Towards Efficient Privacy-Aware Content-based Pub/Sub Systems. IEEE Transactions on Knowledge and Data Engineering. 25(11): 2644-2657, 2013.
21. W. Rao, L. Chen, S. Tarkoma. Evaluating continuous top-k queries over document streams. World Wide Web 17(1): 59-83, 2014.
22. Y. Xiao, Y. Cui, P. Savolainen, M. Siekkinen, A. Wang, L. Wang, A. Ylä-Jääski, S. Tarkoma. Modeling Energy Consumption of Data Transmission over Wi-Fi. IEEE Transactions on Mobile Computing, 13(8): 1760-1773 (2014).
23. S. Tarkoma, H. Ailisto. The internet of things program: the Finnish perspective. IEEE Communications Magazine 51(3): 10-11, 2013.
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25. Mohammad Ashraful Hoque, Matti Siekkinen, Jukka K. Nurminen, Sasu Tarkoma, Mika Aalto: Saving Energy in Mobile Devices for On-Demand Multimedia Streaming - A Cross-Layer Approach. *TOMCCAP* 10(3): 25, 2014.
26. Mohammad Ashraful Hoque, Matti Siekkinen, Jukka K. Nurminen, Mika Aalto, Sasu Tarkoma. Mobile Multimedia Streaming Techniques: QoE and Energy Saving Perspective. *Pervasive and Mobile Computing* 16: 96-114 (2015). Preprint available at <http://arxiv.org/abs/1311.4317>
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35. L. Osmani, S. Tarkoma, P. Eerola, M. Komu, M. J. Kortelainen, O. Kraemer, T. Linden, S. Toor and J. White, An overview of the DII-HEP OpenStack based CMS data analysis, in *Journal of Physics, Conference Series*, Issue 1, Volume 608, ISSN 1742-6596. Available at: <http://iopscience.iop.org/1742-6596/608/1/012010>

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50. Huber Flores, Pan Hui, Petteri Nurmi, Eemil Lagerspetz, Sasu Tarkoma, Jukka Manner, Vassilis Kostakos, Yong Li, Xiang Su. Evidence-Aware Mobile Computational Offloading. *IEEE Trans. Mob. Comput.* 17(8): 1834-1850 (2018)
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52. Stephan Sigg, Eemil Lagerspetz, Ella Peltonen, Petteri Nurmi, Sasu Tarkoma. Exploiting Usage to Predict Instantaneous App Popularity: Trend Filters and Retention Rates. *TWEB* 13(2): 13:1-13:25 (2019)
53. Samuli Hemminki, Keisuke Kuribayashi, Shin'ichi Konomi, Petteri Nurmi, Sasu Tarkoma. Crowd Replication: Sensing-Assisted Quantification of Human Behavior in Public Spaces. *ACM Trans. Spatial Algorithms and Systems* 5(3): 15:1-15:34 (2019)
54. Naser Hossein Motlagh, Tuukka Petäjä, Markku Kulmala, Sasu Tarkoma, Eemil Lagerspetz, Petteri Nurmi, Xin Li, Samu Varjonen, Julien Mineraud, Matti Siekkinen, Andrew Rebeiro-Hargrave, Tareq Hussein. Toward Massive Scale Air Quality Monitoring. *IEEE Communications Magazine* 58(2): 54-59 (2020)
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56. Francesco Concas, Pengfei Xu, Mohammad A. Hoque, Jiaheng Lu, Sasu Tarkoma. Multiple Set Matching with Bloom Matrix and Bloom Vector. *ACM Trans. Knowl. Discov. Data* 14(2): 21:1-21:21 (2020)
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58. M. Pozza, P. Nicholson, D. Lugones, A. Rao, H. Flinck, S. Tarkoma. On Reconfiguring 5G Network Slices. Accepted to *IEEE JSAC*. Early access.

**Book Chapters and Contributions in Books (Category A: Peer-reviewed scientific articles):**

59. M. Laukkanen, S. Tarkoma, and J. Leinonen. FIPA-OS Agent Platform for Small-Footprint Devices. Published in the book *Intelligent Agents VIII*, Springer 2002, pages 447- 460.
60. P. Buckle, T. Moore, S. Robertshaw, A. Treadway, S. Tarkoma, S. Poslad. Scalability in Multi-agent Systems: The FIPA-OS Perspective. *Foundations and Applications of Multi-Agent Systems*. Pages 110-130. *Lecture Notes in Artificial Intelligence (LNAI) 2403*, Springer 2002.
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62. K. Raatikainen, F. Hohl, and S. Tarkoma. Generic Service Elements for Adaptive Applications. In *Technologies for the Wireless Future: Wireless World Research Forum (WWRF)*, John Wiley & Sons, October 2004.
63. S. Tarkoma, J. Korhonen. Understanding Multi-layer Mobility. In *Encyclopedia of Mobile Computing & Commerce (EMCC)*. Published by Idea Group, 2007.
64. S. Tarkoma. Book contribution on service architecture. In *Technologies for the Wireless Future: Wireless World Research Forum (WWRF): Volume 2*, John Wiley & Sons, April 2006.
65. S. Tarkoma, C. Prehofer, A. Zhdanova, H. Rajasekaran. SPICE: Towards Next Generation IMS-based Service Platforms. Invited contribution to International Engineering Consortium (IEC) “Business Models and Drivers for Next Generation IMS Services” report, 2007.
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67. S. Tarkoma, M. Ain, K. Visala. The Publish/Subscribe Internet Routing Paradigm (PSIRP): Designing the Future Internet Architecture. *Towards the Future Internet - A European Research Perspective* Edited by Georgios Tselentis, John Domingue, Alex Galis, Anastasius Gavras, David Hausheer, Srdjan Krco, Volkmar Lotz, Theodore Zahariadis. IOS Press 2009.
68. S. Tarkoma, J. Heikkinen, J. van Gurp. Mobile Push for Converged Mobile Services: the Airline Scenario. Book chapter. *Handbook of Research on Advanced Distributed Event-Based Systems, Publish/Subscribe and Message Filtering Technologies*. Edited by A. Hinze and A. Buchmann, published by IGI, 2010.

69. D. Lagutin, K. Visala, S. Tarkoma. Publish/Subscribe for Internet: PSIRP Perspective. Valencia Future Internet Assembly (FIA) book 2010.
70. D. Lagutin, K. Visala, S. Tarkoma. Security Design for an Inter-Domain Publish/Subscribe Architecture. Future Internet Assembly (FIA) book 2011.
71. Kari Visala, Dmitrij Lagutin, S. Tarkoma. Towards a Minimal Core for Information-Centric Networking. Future Internet Assembly (FIA) book 2013.
72. H. Flores, V. Kostakos, S. Tarkoma, P. Hui, Y. Li. Evidence-Aware Mobile Cloud Architectures. Mobile Big Data 2018, pages 65-84.

**Refereed International Conference and Workshop Papers (Category A: Peer-reviewed scientific articles):**

73. M. Laukkanen, S. Tarkoma, and Jani Leinonen. FIPA-OS Agent Platform for Small-Footprint Devices. In John-Jules Meyer and Milind Tambe, editors, In Pre-Proceedings of the Eighth International Workshop on Agent Theories, Architectures, and Languages (ATAL- 2001), pages 314-325, August 2001.
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75. S. Tarkoma, M. Laukkanen. Facilitating Agent Messaging on PDAs. Fourth International Workshop on Mobile Agents for Telecommunication Applications (MATA-2002), Barcelona, Spain. October 2002. Lecture Notes in Computer Science (LNCS) 2521.
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88. S. Tarkoma and J. Kangasharju. Handover Cost and Mobility-Safety of Content Streams. In Eighth ACM/IEEE International Symposium on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWIM), October 2005.
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### **Patents and invention disclosures (Category H)**

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