Dr. Özgür Kafalı

CONTACT
INFORMATION

North Carolina State University
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RESEARCH
INTERESTS

- Artificial Intelligence
- Multiagent Systems
- Computational Logic
- E-commerce & E-health Systems
- Security & Privacy

EDUCATION

Boğaziçi University, İstanbul, TURKEY

PhD, Department of Computer Engineering, 2012
- Thesis Title: Automated Reasoning on Exceptions in Commitment-Based Multiagent Systems
- Advisor: Dr. Pınar Yolum
- Area of Study: Multiagent Systems

MS, Graduate Program in Systems & Control Engineering, 2007
- Thesis Title: Modeling, Learning, and Utilizing Trust In Multiagent Systems
- Advisor: Dr. Pınar Yolum
- Area of Study: Multiagent Systems

BS, Department of Computer Engineering, 2004
- Project: ECG Arrhythmia Classification Using Hidden Markov Models
- Advisor: Dr. Fikret Gürgen

PUBLICATIONS

Google Scholar Profile: https://scholar.google.com/citations?user=oKXfQusAAAAJ

Working / Submitted Papers, Grant Proposals, and Patent Applications

- In (Minor) Revision: Bedour Alrayes, Özgür Kafalı, and Kostas Stathis. Concurrent Bilateral Negotiation for Open E-Markets: The CONAN Strategy. Knowledge and Information Systems, 2017.
- In Revision: Özgür Kafalı, Nirav Ajmeri, and Munindar P. Singh. DESEN: Specification and Engineering of Normative Multiagent Systems via Design Patterns. Artificial Intelligence Journal, 2017.

- <u>Under Review:</u> Jack Hopkins, Bedour Alrayes, Özgür Kafalı, and Kostas Stathis. Pirasa: Strategic Protocol Selection for E-commerce Agents. Special Issue "Smart e-Commerce Integration with Recommender Systems" in Electronic Markets, 2017.
- <u>Under Review:</u> Özgür Kafalı, and Paolo Torroni. Comodo: Collaborative Monitoring of Commitment Delegations. Expert Systems With Applications, 2017.
- <u>In Preparation:</u> Alfonso E. Romero, Özgür Kafalı, Horacio Caniza, Prajwal Bhat, Kostas Stathis, and Alberto Paccanaro. Agent-based Search for Biological Knowledge Discovery. Nature Communications, 2017.
- <u>In Preparation:</u> Alfonso E. Romero, Özgür Kafalı, Horacio Caniza, Prajwal Bhat, Kostas Stathis, and Alberto Paccanaro. Patent application for 'Biological Knowledge Discovery'. 2017.

Edited Articles

1. Özgür Kafalı and Munindar P. Singh. Guest Editors' Introduction – Improving Cybersecurity: User Accountability and Sociotechnical Systems. IEEE Computing Now, 2017. https://www.computer.org/web/computingnow/archive/improving-cybersecurity-april-2017-introduction

International Journals

2. Özgür Kafalı, Alfonso E. Romero, and Kostas Stathis. Agent-Oriented Activity Recognition in the Event Calculus: An Application for Diabetic Patients. Computational Intelligence, 2017. DOI: 10.1111/coin.12121

3. Özgür Kafalı, Nirav Ajmeri, and Munindar P. Singh. Revani: Revising and Verifying Normative Specifications for Privacy. IEEE Intelligent Systems, 31(5):8–15, 2016.

4. Božidara Cvetković, Vito Janko, Alfonso E. Romero, Özgür Kafalı, Kostas Stathis, and Mitja Luštrek. Activity Recognition for Diabetic Patients Using a Smartphone. Journal of Medical Systems, 40(12):256, 2016.

5. Özgür Kafalı and Pınar Yolum. Pisagor: A ProactIve Software AGent for mOnitoring inteRactions. Knowledge and Information Systems, 47(1):215–239, 2015.

6. Özgür Kafalı, Akın Günay, and Pınar Yolum. Detecting and Predicting Privacy Violations in Online Social Networks. Distributed and Parallel Databases, 32(1):161–190, 2014.

7. Özgür Kafalı, Stefano Bromuri, Michal Sindlar, Tom van der Weide, Eduardo Aguilar Pelaez, Ulrich Schaechtle, Bruno Alves, B. Damien Zufferey, Esther Rodriguez-Villegas, Michael Schumacher, and Kostas Stathis. COMMODITY$_{12}$: A Smart e-Health Environment for Diabetes Management. Journal of Ambient Intelligence and Smart Environments, 5(5):479-502, 2013.

8. Özgür Kafalı and Paolo Torroni. Exception Diagnosis in Multiagent Contract Executions. Annals of Mathematics and Artificial Intelligence, 64(1):73–107, 2012.

International Conferences and Book Chapters

9. Morgan Burcham, Mahran Al-Zyoud, Jeffrey Carver, Mohammed Alsaleh, Hongying Du, Fida Gilani, Jun Jiang, Akond Rahman, Özgür Kafalı, Ehab Al-Shaer, and Laurie Williams. Characterizing Scientific Reporting in Security Literature:

An analysis of ACM CCS and IEEE S&P Papers. In Proceedings of the 4th International Symposium and Bootcamp on the Hot Topics in Science of Security (HotSoS), pages 13–23, 2017.

10. Özgür Kafalı, Jasmine Jones, Megan Petruso, Laurie Williams, and Munindar P. Singh. How Good is a Security Policy against Real Breaches? A HIPAA Case Study. In Proceedings of the 39th International Conference on Software Engineering (ICSE), pages 530–540, 2017.

11. Özgür Kafalı, Nirav Ajmeri, and Munindar P. Singh. KONT: Computing Tradeoffs in Normative Multiagent Systems. In Proceedings of the 31st Conference on Artificial Intelligence (AAAI), pages 3006–3012, 2017.

12. Özgür Kafalı, Munindar P. Singh, and Laurie Williams. NANE: Identifying Misuse Cases Using Temporal Norm Enactments. In Proceedings of the 20th IEEE International Requirements Engineering Conference (RE), pages 136–145, 2016.

13. Özgür Kafalı, Munindar P. Singh, and Laurie Williams. Toward a Normative Approach for Forensicability: Extended Abstract. In Proceedings of the 3rd International Symposium and Bootcamp on the Hot Topics in Science of Security (HotSoS), pages 65–67, 2016.

14. Mitja Luštrek, Božidara Cvetković, Violeta Mirchevska, Özgür Kafalı, Alfonso E. Romero, and Kostas Stathis. Recognising Lifestyle Activities of Diabetic Patients with a Smartphone. In Proceedings of the 9th International Conference on Pervasive Computing Technologies for Healthcare (PervasiveHealth), pages 317–324, 2015.

15. Jack Hopkins, Özgür Kafalı, and Kostas Stathis. Open Game Tournaments in STARLITE (Demonstration). In Proceedings of the 14th International Conference on Autonomous Agents and Multiagent Systems (AAMAS), pages 1927–1928, 2015.

16. Özgür Kafalı, Alfonso E. Romero, and Kostas Stathis. Activity Recognition for an Agent-oriented Personal Health System. In Principles and Practice of Multi-Agent Systems (PRIMA), volume 8861 of Lecture Notes in Computer Science, pages 254–269, 2014 (Best paper nominee).

17. Özgür Kafalı, Ulrich Schaechtle, and Kostas Stathis. HYDRA: a HYbrid Diagnosis and monitoRing Architecture for diabetes. In Proceedings of the 16th IEEE International Conference on E-health Networking, Application & Services (Healthcom), pages 531–536, 2014.

18. Özgür Kafalı, Akın Günay, and Pınar Yolum. GOSU: computing GOal SUpport with commitments in multiagent systems. In Proceedings of the 21st European Conference on Artificial Intelligence (ECAI), pages 477–482, 2014.

19. Bedour Alrayes, Özgür Kafalı, and Kostas Stathis. RECON: a Robust multi-agent Environment for simulating COncurrent Negotiations. In Recent Advances in Agent-based Complex Automated Negotiation (ACAN), volume 638 of Studies in Computational Intelligence, pages 157–174, 2014 (Best student paper).

20. Bedour Alrayes, Özgür Kafalı, and Kostas Stathis. CONAN: A Heuristic Strategy for Concurrent Negotiating Agents (Extended Abstract). In Proceedings of the 13th International Conference on Autonomous Agents and Multiagent Systems (AAMAS), pages 1585–1586, 2014.

21. Damian Wood, Özgür Kafalı, and Kostas Stathis. $\mathcal{DIESECT}$: A $\mathcal{DI}$stributed $\mathcal{E}$nvironment for $\mathcal{S}$imulating $\mathcal{E}$-commerce $\mathcal{C}$ontrac$\mathcal{T}$s. In E-Commerce and Web Technologies (EC-WEB), volume 152 of Lecture Notes in Business Information Processing, pages 39–50, 2013.

22. Özgür Kafalı, Akın Günay, and Pınar Yolum. $\mathcal{PROTOSS}$: A run time tool for detecting $\mathcal{PR}$ivacy vi$\mathcal{O}$la$\mathcal{T}$ions in $\mathcal{O}$nline $\mathcal{S}$ocial network$\mathcal{S}$ (Short Paper). In Proceedings of the IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM), pages 429–433, 2012.

23. Özgür Kafalı, Francesca Toni, and Paolo Torroni. Reasoning About Exceptions to Contracts. In Computational Logic in Multi-Agent Systems (CLIMA XII), volume 6814 of Lecture Notes in Computer Science, pages 225–242, 2011.

24. Özgür Kafalı and Paolo Torroni. Social Commitment Delegation and Monitoring. In Computational Logic in Multi-Agent Systems (CLIMA XII), volume 6814 of Lecture Notes in Computer Science, pages 171–189, 2011.

25. Özgür Kafalı, Francesca Toni, and Paolo Torroni. Collaborative Diagnosis of Exceptions to Contracts (Extended Abstract). In Proceedings of the 10th International Conference on Autonomous Agents and Multiagent Systems (AAMAS), pages 1167–1168, 2011.

26. Özgür Kafalı and Paolo Torroni. Diagnosing Commitments: Delegation Revisited (Extended Abstract). In Proceedings of the 10th International Conference on Autonomous Agents and Multiagent Systems (AAMAS), pages 1175–1176, 2011.

27. Özgür Kafalı, Federico Chesani, and Paolo Torroni. What Happened to My Commitment? Exception Diagnosis Among Misalignment and Misbehavior. In Computational Logic in Multi-Agent Systems, volume 6245 of Lecture Notes in Computer Science, pages 82–98, 2010.

28. Özgür Kafalı and Pınar Yolum. Detecting Exceptions in Commitment Protocols: Discovering Hidden States. In Languages, Methodologies, and Development Tools for Multi-Agent Systems, volume 6039 of Lecture Notes in Computer Science, pages 112–127, 2010.

29. Özgür Kafalı and Pınar Yolum. Adapting Reinforcement Learning For Trust: Effective Modeling in Dynamic Environments (Short Paper). In Proceedings of the IEEE/WIC/ACM International Conference on Web Intelligence, pages 383–386, 2009.

30. Özgür Kafalı and Pınar Yolum. Action-Based Environment Modeling for Maintaining Trust. In Trust in Agent Societies, volume 5396 of Lecture Notes in Computer Science, pages 81–98, 2008.

Other Workshop Proceedings and Posters

31. Özgür Kafalı, Munindar P. Singh, and Laurie Williams. Toward Normative Threat Models to Prevent Misuse: Poster. In the 4th International Symposium and Bootcamp on the Hot Topics in Science of Security (HotSoS), 2017. http://cps-vo.org/node/34187

32. Özgür Kafalı, Nirav Ajmeri, and Munindar P. Singh. Normative Requirements in Sociotechnical Systems. In Proceedings of the 9th International Workshop on Requirements Engineering and Law (RELAW), pages 259–260, 2016.

33. Özgür Kafalı, Nirav Ajmeri, and Munindar P. Singh. Formal Understanding of Tradeoffs among Liveness and Safety Requirements. In Proceedings of the 3rd International Workshop on Artificial Intelligence for Requirements Engineering (AIRE), pages 17–18, 2016.

34. Özgür Kafalı, Michal Sindlar, Tom van der Weide, and Kostas Stathis. $\mathcal{ORC}$: an $\mathcal{O}$ntology $\mathcal{R}$easoning $\mathcal{C}$omponent for Diabetes. In Proceedings of the 2nd International Workshop on Artificial Intelligence and Netmedicine (NetMed), 2013.

35. Özgür Kafalı and Pınar Yolum. A Distributed Treatment of Exceptions in Multiagent Contracts (Preliminary Report). In Proceedings of the 9th International Workshop on Declarative Agent Languages and Technologies (DALT), AAMAS, 2011.

36. Özgür Kafalı and Pınar Yolum. Improving Self-Organized Resource Allocation with Effective Communication. In Proceedings of the 7th International Workshop on Agents and Peer-to-Peer Computing, AAMAS, pages 7–18, 2008.

37. Özgür Kafalı and Pınar Yolum. Trust strategies for ART Testbed. In Proceedings of the 9th International Workshop on Trust in Agent Societies, AAMAS, pages 43–49, 2006.

TEACHING &
SUPERVISION
EXPERIENCE

- Instructor for final year undergraduate special topics course on 'Privacy' https://ozgurkafali.github.io/courses/ncsu/csc495, NCSU 2017
- Supervised one undergraduate student as part of the REU program of the US National Science Foundation, NCSU 2017
- Guest lecturer for 'Software Engineering' course on 'Protection Poker', NCSU 2016
- Supervised two undergraduate students as part of the REU program of the US National Science Foundation, NCSU 2016
- Assisted 'Multiagent Systems' course (tutorials & coursework), RHUL 2014
- Co-supervised one PhD student, RHUL 2013 - 2014
- Co-supervised one MS student, RHUL 2012 - 2013
- Co-supervised two undergraduate students, RHUL 2012 - 2014

TALKS

- Talk on 'Does HIPAA Protect against Healthcare Data Breaches?' at Healthcare IT forum, NCSU, 2017
- Talk on 'Healthcare Regulations vs Patient Privacy Breaches' at Carolina Privacy Officials Network (CPON) members and the International Association of Privacy Professionals (IAPP) meeting, Quintiles IMS, 2017
- Talk on 'How Good is a Security Policy against Breaches?' at Science of Security meeting, NCSU, 2017
- Pecha Kucha talks on 'Social Aspects of Software Security' at Science of Security community meetings, NCSU, 2015-2016
- Moderated panel on 'Industry Impact' at Science of Security summer workshop, NCSU, 2016
- Talk on 'Impact of Security Research on Practice' at Science of Security summer workshop, NCSU, 2016
- Talk on 'Misuse Cases in Healthcare: A Sociotechnical View' at Healthcare IT forum, NCSU, 2016
- Lead for 'Workshop on Policy Governance via Social Norms' at Science of Security meeting, UMD, 2015

WORK
EXPERIENCE &
GRANTS

North Carolina State University, USA
Science of Security Project supported by the US National Security Agency
https://www.nsa.gov/what-we-do/research/science-of-security/
Postdoctoral Researcher **May 2015 to ...**

Royal Holloway, University of London, UK
Commodity$_{12}$ FP7 Project supported by the European Union
Postdoctoral Researcher **August 2012 to December 2014**

The Scientific and Technological Research Council of Turkey
Project Scholar **September 2011 to July 2012**

DEIS, University of Bologna, Visiting Researcher **March 2010 to June 2010**

Turkish State Planning Organization
Project Scholar **February 2009 to July 2012**

The Scientific and Technological Research Council of Turkey
Project Scholar **June 2008 to June 2010**

Telenity, İstanbul, Software Engineer **November 2006 to February 2008**

Yapı Kredi Sigorta, İstanbul, Senior Developer **April 2004 to October 2006**

PROFESSIONAL
ACTIVITIES &
REVIEWER WORK

- Lead guest editor for upcoming special section (October 2017) of ACM Transactions on Internet Technology on 'Artificial Intelligence for Security and Privacy'

- Organizer for the International Workshop on AI for Privacy and Security (PrAISe 2016): http://mas.cmpe.boun.edu.tr/praise2016/

- Assisted PC meeting for the International Conference on Software Engineering, 2015

- Reviewer for international journals:
  - Autonomous Agents and Multi-Agent Systems
  - ACM Transactions on Internet Technology
  - The Knowledge Engineering Review
  - IEEE Transactions on Emerging Topics in Computing
  - Journal of Medical Systems
  - International Journal of Agent-Oriented Software Engineering
  - Pervasive and Mobile Computing
  - International Journal of Distributed Sensor Networks
  - IEEE Internet Computing
  - Transactions on Parallel and Distributed Systems
  - Scalable Computing: Practice and Experience
  - Artificial Intelligence in Medicine

- Program committee member for international conferences:
  - AAAI Conference on Artificial Intelligence
  - International Joint Conference on Artificial Intelligence
  - International Conference on Autonomous Agents and Multiagent Systems
  - European Conference on Artificial Intelligence
  - International Conference on Principles and Practice of Multi-Agent Systems
  - International Conference on Agents and Artificial Intelligence

- Other reviewer work:
  - International Symposium on Software Reliability Engineering
  - International Symposium on Parallel and Distributed Computing
  - IEEE International Conference on Web Services
  - International Conference on Mining Software Repositories
  - International Symposium on Empirical Software Engineering and Measurement
  - International Workshop on Coordination, Organizations, Institutions and Norms in Agent Systems
  - International Workshop on Artificial Intelligence for Requirements Engineering
  - International Workshop on Artificial Intelligence for Diabetes

INTERESTS

- Electric guitars
- eSports
- Fantasy literature

REFERENCES

Available on request