MURAT YUKSEL

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SUMMARY OF QUALIFICATIONS

- **Research Areas and Interests**
  - My research interests are in **networked, wireless, and computer systems** with a recent focus on ***big-data and cloud networking, optical wireless, spectrum sharing, public safety communications, device-to-device protocols, network architectures and economics, online network management, and network science***. My older work, with occasional current activity, has included wireless routing, multicast, peer-to-peer, overlays, and network simulation. Major application areas include datacenter management, big data transfers, cloud computing, policy sciences, smart grid, cyber-physical systems, and health sciences.
  - Worked as a Software Engineer at Pepperdata (Sunnyvale, CA) on optimization of *Hadoop/YARN* clusters processing *MapReduce* tasks.
- **Research Projects, Grants, and Proposals**
  - My current research projects are on (a) pervasive spectrum sharing for public safety communications, (b) multi-element free-space-optical (FSO) modules for mobile opportunistic networking and lighting, (c) parallel networking for big-data transfers, (d) cloud-assisted routing, (e) Online Management, Experimentation, and GAme (OMEGA) of large-scale networks, and (f) economics of cyber-security, cyber-sharing and crypto-currencies.
  - My research projects attracted a total of **$4.8M in external funding ($2.8M as PI)** from various agencies: **nine** awards from **NSF**, **one** award from **ARO**, **one** grant from **AT&T Labs**, **one** grant from **NASA**, one SBIR grant from **DARPA** (with my startup Omega Advanced Solutions, Inc.), and two SBIR grants from **Navy** (with UC Corporation).
- **Research and Professional Activities**:
  - Published 3 book chapters, 37 journal and 97 conference papers, and have 4 awarded patents.
  - Serving as an Associate Editor for Computer Networks, Elsevier since 2014.
  - Serving as a co-Editor-in-Chief for EAI Endorsed Transactions on Future Internet (sponsored by the European Union) since 2016.
  - Has served as a panelist at NSF many times; a steering committee of IEEE LANMAN; a co-chair or technical program committee (TPC) co-chair of conferences such as IEEE LANMAN and IEEE NAS; a TPC member of conferences such as IEEE ICNP, IEEE INFOCOM, IEEE ICC, IEEE ICCCN, and IEEE GLOBECOM.
- **Teaching Experience**
  - Graduated 6 Ph.D. and 13 M.S. students. All Ph.D. graduates went to prestigious companies (e.g., Intel, Cisco, Microsoft, Google) or academic positions. Currently supervising 7 Ph.D. students.
  - Introduced novel role-playing modules to the CS 446/646 course: We published the results on the effectiveness of our role-playing modules.
  - Taught several undergraduate- and graduate-level courses at UNR and RPI, e.g.:
    - CS 792 Graduate Seminar (UNR) (new course)
    - CS 791G Topics: Network Architectures and Economics (UNR) (new course)
    - CPE 701 Internet Protocol Design (UNR) (new course)
    - CS 446/646 Principles of Computer Operating Systems (UNR)
    - CPE 201 Introduction to Computer Engineering (Digital Design) (UNR)
    - ECSE-2660 Computer Architecture, Networks and Operating Systems (CANOS) (RPI)
    - ECSE-2410 Signals and Systems (RPI)

Murat Yuksel
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EDUCATION

- **Ph.D. in Computer Science, August 2002**
  Rensselaer Polytechnic Institute, Troy, NY, US
  Ph.D. Thesis: Architectures for Congestion-Sensitive Pricing of Network Services
  Advisor: Prof. Shivkumar Kalyanaraman

- **M.S. in Computer Science, August 1999**
  Rensselaer Polytechnic Institute, Troy, NY, US

- **B.S. in Computer Engineering, September 1996**
  Ege University, Izmir, Turkey

EXPERIENCE

8/2016 - Present **Associate Professor**
ECE Department, University of Central Florida, Orlando, FL, US

7/2012 - 7/2016 **Associate Professor**
Department of CSE, University of Nevada - Reno, Reno, NV, US

12/2014 - 7/2015 **Software Engineer**
Pepperdata, Sunnyvale, CA, US
Worked on load balancing and dynamic memory management of MapReduce tasks over a Hadoop cluster. Wrote production code in a Python and Java codebase. Performed unit, system and performance testing. Submitted code reviews in a team of 8+ engineers. Worked with TSDB, iPython and Amazon EC2 environments. Collected various system level metrics (mostly from /proc) to report the health of cluster nodes to a supervisor node (via Google Protobuf messages) as well as to a dashboard.
Analyzed high swapping activities in a customer site and used the insights from the analysis for designing heuristics to detect high swapping activity in a distributed computing environment. Developed some of the heuristics into the codebase. Designed various MapReduce task (de)allocation schemes in response to the detected swap events. Filed a patent from the inventions in swap detection and response.

7/2006 – 6/2012 **Assistant Professor**
Department of CSE, University of Nevada - Reno, Reno, NV, US

6/2007 – 8/2007 **Visitor**
AT&T Labs Research, Florham Park, NJ, US
Designed and analyzed cross-layer multicast (between layers 2 and 3) protocols to facilitate heavy IPTV flows over a backbone carrier network.

8/2002 – 8/2006 **Postdoctoral Research Associate and Lecturer** (Adjunct Faculty)
Department of ECSE, Rensselaer Polytechnic Institute, Troy, NY, US

5/2006 – 5/2006 **Visiting Scientist**
Center for Nonlinear Studies, Los Alamos National Lab, Los Alamos, NM, US
Designed scale-free topology growth techniques for peer-to-peer and overlay systems.

8/1999 – 8/2002 **Research Assistant**
Department of ECSE, Rensselaer Polytechnic Institute, Troy, NY, US

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8/1999 – 8/2002 **Teaching Assistant**
Department of CS, Rensselaer Polytechnic Institute, Troy, NY, US

Summer 2001 (5/2001 – 8/2001) **Research Intern**
Sun Microsystems Laboratories, Burlington, MA, US
Designed and analyzed deadlock-free routing protocols for lossless networks, such as InfiniBand I/O networks.

7/1996 – 7/1998 **Instructor & System Administrator**
International Turkmen-Turkish University (ITTU), Ashgabat, Turkmenistan

RESEARCH PROPOSAL & FUNDING EXPERIENCE

Awarded (current)

- US Ignite: Collaborative Research: Focus Area 1: Rapid and Resilient Critical Data Sourcing for Public Safety and Emergency Response
  Role: **PI**, [Lead PI: E. Bulut (VCU), Co-PI: M. Manic (VCU)]
  Sponsor: **NSF** RET (CNS 1647189)
  Budget: **$220K** (out of $600K)
  Start Date: February 1, 2017 *Expiration Date*: January 31, 2020

- RET Site: CyberSecurity Initiative for Nevada Teachers (CSINT)
  Role: **Senior Person**, [PI: S. Sengupta, Co-PI: M. H. Gunes Senior Persons: D. Feil-Seifer, M. Leverington, G. Bebis, N. LaTourette, S. Louis, A. Munir, M. Nicolescu, Y. Varol (UNR)]
  Sponsor: **NSF** RET (CNS 1542465)
  Budget: **$540K**
  Start Date: September 1, 2015 *Expiration Date*: August 30, 2018

- Pervasive Spectrum Sharing for Public Safety Communications
  Role: **Lead PI**, [Co-PIs: T. Quint (UNR), I. Guvenc and A. Chowdhury (FIU), W. Saad (Virginia Tech), and N. Kapucu (UCF)]
  Sponsor: **NSF** EARS (AST 1444077)
  Budget: **$690K** ($245K is designated for UNR)
  Start Date: September 15, 2014 *Expiration Date*: September 14, 2017

- Multi-Element Illuminication for Mobile Free-Space-Optical Networks
  Role: **Lead PI**, [Co-PIs: N. Pala and I. Guvenc (FIU)]
  Sponsor: **NSF** NeTS (CNS 1422354)
  Budget: **$500K** ($250K is designated for UNR)
  Start Date: August 15, 2014 *Expiration Date*: August 14, 2017

- Online Management, Experimentation, and GAme (OMEGA) of Large-Scale Networks
  Role: **PI**, [Co-PI: M. H. Gunes (UNR); Senior Personnel: R. Houmanfar (UNR)]
  Sponsor: **NSF** NeTS (CNS 1321069)
  Budget: **$200K**
  Start Date: October 1, 2013 *Expiration Date:* September 30, 2016

Awarded (past)

- Multi-Element Free-Space-Optical Modules for Mobile Opportunistic Networking
  Role: **PI**
  Sponsor: **U.S. Army Research Office (ARO)**, DURIP W911NF-14-1-0531
  Budget: **$150K**
  Start Date: August 1, 2014 *Expiration Date*: July 31, 2016

- Free-Space-Optical Modules for Space Rovers
  Role: **PI**
  Sponsor: **NASA** NV Space Consortium Research Infrastructure Building Program
  Budget: **$40K**
  Start Date: January 1, 2014 *Expiration Date:* December 31, 2015

- Integrative Weight Aggregation Framework for Network Flow Priority Quantification
  Role: **Consultant**
  Sponsor: UC Corporation (as part of **ONR** SBIR Phase I grant)
  Budget: **$70K** ($8K is designated for UNR)
  Start Date: May 7, 2012 *Expiration Date:* November 9, 2012

- Reactive Planning and Management Architecture for MANET
  Role: **Consultant**
  Sponsor: UC Corporation (as part of **Navy JTRS** SBIR Phase I grant)
  Budget: **$70K** ($9K is designated for UNR)
  Start Date: December 22, 2010 *Expiration Date:* June 21, 2011

- Bally Technologies Sponsored Student Project in Computer Science and Engineering
  Role: **Co-PI**, [PI: S. Dascalu, Co-PI: E. Folmer (UNR)]
  Sponsor: Bally Technologies
  Budget: $12,380
  Start Date: January 31, 2009 *Expiration Date:* June 15, 2009

- REU Supplement – Free-Space-Optical Mobile Ad-Hoc Networks (FSO-MANETs)
  Role: **PI**
  Sponsor: NSF NeTS
  Budget: $12K
  Start Date: September 2008 *Expiration Date:* August 2009

- FIND: SWITCHNET: A Switched Internetworking Architecture with Contracted Services
  Role: **Co-PI**, [PI: N. Shenoy (RIT), Co-PIs: V. Perotti (RIT), M. Yuksel (UNR), A. Gupta and K. Kar (RPI)]
  Sponsor: **NSF** NeTS (NSF 0831957)
  Budget: $**300K** ($25K is designated for UNR)
  Start Date: October 2008 *Expiration Date:* September 2010

- Relative Localization using Free-Space-Optical Communications
  Role: **Consultant**
  Sponsor: Omega Advanced Solutions, Inc. (as part of **DARPA** SBIR Phase I grant W31P4Q-08-C-0080)
  Budget: **$100K** ($30K is designated for Murat Yuksel)
  Start Date: January 2008 *Expiration Date:* October 2008

- Free-Space-Optical Mobile Ad-Hoc Networks (FSO-MANETs)
  Role: **Lead PI**, [Co-PIs: M. Hella (RPI) and S. Kalyanaraman (RPI)]
  Sponsor: **NSF** NeTS (NSF 0721542)
  Budget: **$498K** ($228K is designated for UNR)
  Start Date: September 2007 *Expiration Date:* August 2010

- FIND: Value Flows and Risk Management Architecture for Future Internet
  Role: **Lead PI**, [Co-PIs: A. Gupta (RPI), K. Kar (RPI), and S. Kalyanaraman (RPI)]
  Sponsor: **NSF** NeTS (NSF 0721600)
  Budget: **$510K** ($240K is designated for UNR)
  Start Date: September 2007 *Expiration Date:* August 2010

- Analysis of PIM Reconfiguration in Video Backbone Networks
  Role: **PI**
  Sponsor: **AT&T Labs-Research**, The Virtual University Research Initiative (VURI) Program
  Budget: **$15K**
  Start Date: August 2007 *Expiration Date:* August 2008

- Towards Disconnection-Tolerant, Opportunistic Internet
  Role: **Co-PI** [PI: S. Kalyanaraman (RPI), Co-PIs: P. Drineas (RPI), A. Abouzeid (RPI)]
  Sponsor: **NSF** NeTS (NSF 0627039)
  Budget: **$460K** ($45K is subcontracted to UNR)
  Start Date: September 2006 *Expiration Date:* August 2009 (no cost extension to August 2010)

- ROSS.Net: A Platform for Integrated, Large-Scale Network Simulation and Experimentation
  Role: **Non-PI Personnel** [PI: S. Kalyanaraman (RPI), Co-PI: C. Carothers (RPI)]
  Sponsor: **NSF** NeTS (NSF 0435259)
  Budget: **$500K**
  Start Date: September 2004 *Expiration Date:* August 2007

TEACHING EXPERIENCE

Only lecturer or instructor work is listed:

- University of Central Florica (UCF), Orlando, FL
  - EEL-4768 Computer Architecture, Fall 2016
- University of Nevada - Reno (UNR), Reno, NV
  - CS-792 Graduate Seminar, Fall 2010 – Spring 2016
  - CS-791G Topics: Network Architecture and Economics, Fall 2011, Fall 2012, Fall 2015
  - CPE-701 Internet Protocol Design, Spring 2008, Spring 2009, Spring 2010, Spring 2012, Spring 2014, Spring 2016
  - CPE-401/601 Computer Networked Systems, Spring 2013
  - CPE-400/600 Computer Communication Networks, Fall 2009, Fall 2010
  - CS-446/646 Principles of Computer Operating Systems (POS), Fall 2006, Spring 2007, Fall 2007, Spring 2008, Fall 2008, Fall 2009, Spring 2010, Spring 2011
  - CPE-491/691 Topics in Computer Engineering: Internet Protocols, Spring 2007
  - CPE-201 Introduction to Computer Engineering (Digital Design), Fall 2010, 2011, 2012, 2013, Spring 2014, Fall 2015
- Rensselaer Polytechnic Institute (RPI), Troy, NY
  - ECSE-2660 Computer Architecture, Networks and Operating Systems (CANOS), Spring 2003, Spring 2004, Spring 2005, Spring 2006
  - ECSE-2410 Signals and Systems, Fall 2002, Spring 2003
- International Turkmen-Turkish University (ITTU), Ashgabat, Turkmenistan
  - Introduction to Computer Engineering, Spring 1998
  - Algorithms and Programming I, Fall 1997
  - Algorithms and Programming II, Spring 1998
  - Mathematical Programming, Spring 1997
  - Introduction to Computers, Fall 1996

GRADUATE STUDENTS ADVISED

Ph.D. Students (current)

- Satish Kumar Badepalli, *network science* (post-quals, expected graduation in August 2016)
- Ahmet Soran, *multi-core parallel routing for big data transfers* (post-quals, expected graduation in August 2016)
- Mahmudur Khan, *free-space-optical networks* (expected graduation in May 2017)
- Prasun K. Dey, *cloud-assisted routing, network management* (expected graduation in August 2018)
- Sifat Ibne Mushfique, *illuminication*, (expected graduation in December 2020)
- Mostafizur Rahman, *spectrum sharing*, (expected graduation in December 2020)
- Mustafa Solmaz, *network management*, (expected graduation in December 2020)

B.S. Students (current)

- Garrett Winkelmaier

Ph.D. Students (graduated/defended)

- Mustafa Omer Kilavuz, "Application-Specific Topology-Independent Routing for Multi-hop Wireless Networks", December 2013. *(with Cisco)*
- Abdullah Sevincer, "Transceiver Selection for Multi-Element Free-Space-Optical Communications", May 2013. *(with Intel)*
- Hasan Tarik Karaoglu, "Contract Routing Architecture", December 2012. *(with Cisco)*
- Bilal Gonen, "Probabilistic Trans-Algorithmic Search", August 2011. *(with U of West Florida)*
- Suat Mercan, "Virtual Direction Multicast for Overlay Networks", August 2011. *(with Zirve University)*
- Mehmet Bilgi, "Multi-Transceiver Free-Space-Optical Structures for Mobile Ad-Hoc Networks", December 2010. *(with Microsoft)*

M.S. Students (graduated)

- Prasun K. Dey, "On the Breakeven Points Between Cloud-Assisted and Traditional Routing", August 2016.
- Sandeep Matthew, "A Device-to-Device Service Sharing Middleware for Heterogeneous Wireless Networks", December 2015.
- Prabath Palathingal, "Software-Defined Multi-Element VLC Architecture for High Spatial Reuse", May 2015.
- Mahmudur Khan, "GPS-Free Maintenance of A Free-Space-Optical Link Between Two Autonomous Mobiles", May 2015.
- John Russell, May 2013.
- Arun Karnati, "Popularity-Based Scale-Free Models for Unstructured Peer-to-Peer Networks", December 2011.
- Anusha Uppaluri, "A Two-Market Inter-ISP Contracting Framework: Bandwidth Allotment Problem", August 2011.
- Akilan Velmurugan, "Virtual Multicast Link via Packet Re-entrance in NS2", August 2011.
- Engin Arslan, "Network Management Game", August 2011.
- Abdullah Sevincer, "On Prototyping Multi-Transceiver Free-Space-Optical Communication Structures", August 2010.
- Hasan Tarik Karaoglu, "Link-State Contract Routing Protocol", December 2009.
- Durgesh Rani Kumari, "Ad-Hoc Limited Scale-Free Models for Unstructured Peer-to-Peer Networks", December 2009.
- Mustafa Omer Kilavuz, "Minimizing Multi-Hop Wireless Routing State under Application-Based Accuracy Constraints", May 2009.
- Mehmet Bilgi, "Capacity Scaling in Free-Space-Optical Mobile Ad-Hoc Networks", April 2008.

AWARDS & HONORS

- *Faculty Excellence Award*, College of Engineering, UNR, 2016.
- *Senior Member*, ACM, 2015.
- *Best CSE Researcher Award*, Computer Science and Engineering, UNR, 2014.
- *Senior Scholar Mentor*, College of Engineering, UNR, May 2014.
- *Senior Member*, IEEE, 2011.
- *Best Paper Award*, IEEE International Workshop on Local and Metropolitan Area Networks (LANMAN) 2008, Cluj-Napoca, Romania.
- *Best Paper Award Nominee*, IEEE ISCC 2003, Antalya, Turkey.
- *Achievement Award* in recognition of two invention disclosures, Sun Labs, Burlington, MA, 2001.
- Scholarship from Turkish Government for graduate studies in US, 1998-2001.

PUBLICATIONS

Journal (full paper refereed)

37. M. Khan, **M. Yuksel**, and G. Winkelmaier, GPS-Free Maintenance of a Free-Space-Optical Link Between Two Autonomous Mobiles, to appear in *IEEE Transactions on Mobile Computing*.

36. N. Kapucu, B. Haupt, **M. Yuksel**, I. Guvenc, and W. Saad, On the Evolution of Wireless Communication Technologies and Spectrum Sharing for Public Safety: Policies and Practice, *Risk, Hazards & Crisis in Public Policy*, Volume 7, Issue 3, Pages 129-145, September 2016.
35. S. Mercan and **M. Yuksel**, Virtual Direction Multicast: An Efficient Overlay Tree Construction Algorithm, *IEEE/KICS Journal of Communications and Networks*, Volume 18, Issue 3, Pages 446-459, June 2016.
34. N. Kapucu, B. Haupt, and **M. Yuksel**, Wireless Communication and Spectrum Sharing for Public Safety in the US, *Journal of Emergency Management*, Volume 14, Issue 3, Pages 167-176, May 2016.
33. G. Gunduz and **M. Yuksel**, Popularity-Based Scalable Peer-to-Peer Topology Growth, *Computer Networks*, Elsevier Science, Volume 100, Pages 124-140, May 2016.
32. **M. Yuksel**, I. Guvenc, W. Saad, and N. Kapucu, Pervasive Spectrum Sharing for Public Safety Communications, *IEEE Communications Magazine*, Volume 54, Issue 3, Pages 22-29, March 2016.
31. A. Sahin, Y. S. Eroglu, I. Guvenc, N. Pala, and **M. Yuksel**, Hybrid 3D Localization for Visible Light Communication Systems, *IEEE/OSA Journal of Lightwave Technology*, Volume 33, Issue 22, Pages 4589-4599, September 2015.
30. M. H. Gunes, **M. Yuksel**, and H. Ceker, A Blind Processing Framework to Facilitate Openness in Smart Grid Communications, *Computer Networks*, Elsevier Science, Volume 86, Pages 14-26, July 2015.
29. E. Arslan, **M. Yuksel**, and M. H. Gunes, Training Network Administrators in a Game-Like Environment, *Journal of Network and Computer Applications*, Elsevier Science, Volume 53, Pages 14-23, July 2015.
28. B. Gonen, G. Gunduz, and **M. Yuksel**, Automated Network Management and Configuration Using Probabilistic Trans-Algorithmic Search, *Computer Networks*, Elsevier Science, Volume 76, Pages 275-293, January 2015.
27. H. Kardes, A. Sevincer, M. H. Gunes, and **M. Yuksel**, Complex Network Analysis of Research Funding Networks: A Case Study of NSF Grants, *State of the Arts Applications of Social Network Analysis*, Springer, Lecture Notes in Social Networks, pp. 163-167, May 2014.
26. M. Bilgi and **M. Yuksel**, Capacity Scaling in Free-Space-Optical Mobile Ad Hoc Networks, *Ad Hoc Networks*, Elsevier Science, Volume 12, Pages 150-164, January 2014.
25. H. T. Karaoglu, A. Gupta, **M. Yuksel**, W. Liu, and K. Kar, Bailout Forward Contracts for Edge-to-Edge Internet Services, *Computer Communications*, Elsevier, Volume 36, Number 17-18, Pages 1708-1725, November-December 2013.
24. A. Sevincer, A. Bhattarai, M. Bilgi, **M. Yuksel**, and N. Pala, LIGHTNETs: Smart LIGHTing and Mobile Optical Wireless NETworks – A Survey, *IEEE Communications Surveys and Tutorials*, Volume 15, Number 4, Pages 1620-1641, April 2013.
23. A. Sevincer, M. Bilgi, and **M. Yuksel**, Automatic Realignment with Electronic Steering of Free-Space-Optical Transceivers in MANETs: A Proof-of-Concept Prototype, *Ad Hoc Networks*, Elsevier Science, Volume 11, Number 1, Pages 585-595, January 2013.
22. E. Arslan, **M. Yuksel**, and M. H. Gunes, Network Management Game, *ACM SIGCOMM Computer Communication Review*, Volume 43, Number 1, Pages 46-50, January 2013.
21. **M. Yuksel**, K. K. Ramakrishnan, S. Kalyanaraman, J. D. Houle, and R. Sadhvani, Required Extra Capacity: A Comparative Estimation of Overprovisioning Needed for a Classless IP Backbone, *Computer Networks*, Elsevier Science, Volume 56, Number 17, Pages 3723-3743, November 2012.
20. P. K. Muthuswamy, A. Gupta, **M. Yuksel**, and K. Kar, Path-Vector Contracting: Profit Maximization and Risk Management, *Computer Networks*, Elsevier Science, Volume 56, Issue 4, Pages 1286-1302, March 2012.
19. M. Bilgi, A. Sevincer, **M. Yuksel**, and N. Pala, Optical Wireless Localization, *Wireless Networks*, ACM/Springer, Volume 18, Issue 2, Pages 215-226, February 2012.
18. M. O. Kilavuz and **M. Yuksel**, Path Approximation for Multi-Hop Wireless Routing under Application-Based Accuracy Constraints, *Computer Networks*, Elsevier Science, Volume 56, Issue 1, Pages 345-364, January 2012.
17. **M. Yuksel**, K. K. Ramakrishnan, R. D. Doverspike, R. K. Sinha, G. Li, K. N. Oikonomou, and D. Wang, Cross-Layer Failure Restoration of IP Multicast with Applications to IPTV, *Computer Networks*, Elsevier Science, Volume 55, Issue 9, Pages 2329-2351, June 2011.

16. D. R. Kumari, H. Guclu, and **M. Yuksel**, Ad-hoc Limited Scale-Free Models for Unstructured Peer-to-Peer Networks, *Peer-to-Peer Networking and Applications*, Springer, Volume 4, Number 2, Pages 92-105, June 2011.
15. B. Cheng, **M. Yuksel**, and S. Kalyanaraman, Using Directionality in Mobile Routing, *Wireless Networks*, ACM/Springer, Volume 16, Number 17, Pages 2065-2086, October 2010.
14. B. Nakhkoob, M. Bilgi, **M. Yuksel**, and M. Hella, Multi-Transceiver Optical Wireless Spherical Structures for MANETs, *IEEE Journal on Selected Areas of Communications*, Volume 27, Number 9, December 2009.
13. T. Karabacak, H. Guclu, and **M. Yuksel**, Network Behavior in Thin Film Growth Dynamics, *Physical Review B*, Volume 79, Issue 19, May 2009.
12. H. Guclu and **M. Yuksel**, Limited Scale-Free Overlay Topologies for Unstructured Peer-to-Peer Networks, *IEEE Transactions on Parallel and Distributed Systems*, Volume 20, Number 5, Pages 667-679, May 2009.
11. M. Leverington, **M. Yuksel**, and M. Robinson, Using Role Play for an Upper Level CS Course, *The Journal of Computing Sciences in Colleges*, Volume 24, Number 4, Pages 259-266, April 2009. (also appeared in CCSC Southwestern Conference)
10. **M. Yuksel**, J. Akella, S. Kalyanaraman, and P. Dutta, Free-Space-Optical Mobile Ad-Hoc Networks: Auto-Configurable Building Blocks, *ACM/Springer Wireless Networks*, Volume 15, Number 3, Pages 295-312, April 2009.
9. B. Cheng, **M. Yuksel**, and S. Kalyanaraman, Orthogonal Rendezvous Routing Protocol for Wireless Mesh Networks, *IEEE/ACM Transactions on Networking*, Volume 17, Number 2, Pages 542-555, April 2009.
8. T. Ye, H. T. Kaur, S. Kalyanaraman, and **M. Yuksel**, Large-Scale Network Parameter Configuration Using an On-line Simulation Framework, *IEEE/ACM Transactions on Networking*, Volume 16, Issue 4, Pages 777-790, August 2008.
7. J. Li, **M. Yuksel**, X. Fan, and S. Kalyanaraman, Generalized Multicast Congestion Control, *Computer Networks*, Elsevier Science, Volume 51, Issue 6, Pages 1421-1443, April 2007.
6. J. Li, **M. Yuksel**, and S. Kalyanaraman, Explicit Rate Multicast Congestion Control, *Computer Networks*, Elsevier Science, Volume 50, Issue 15, Pages 2614-2640, October 2006.
5. **M. Yuksel**, R. Pradhan, and S. Kalyanaraman, An Implementation Framework for Trajectory-Based Routing in Ad Hoc Networks, *Ad Hoc Networks*, Elsevier Science, Volume 4, Issue 1, Pages 125-137, January 2006.
4. M. A. Abdul-Karim, B. Roysam, N. Dowell, A. Jeromin, **M. Yuksel**, and S. Kalyanaraman, Automatic Selection of Parameters for Vessel/Neurite Segmentation Algorithms, *IEEE Transactions on Image Processing,* special Issue on Molecular and Cellular Bioimaging, Volume 14, Number 9, Pages 1338–1350, September 2005.
3. **M. Yuksel** and S. Kalyanaraman, Effect of Pricing Intervals on Congestion-Sensitivity of Network Prices, *Telecommunication Systems*, Kluwer Academic Publishing, Volume 28, Issue 1, Pages 79-99, January 2005.
2. **M. Yuksel** and S. Kalyanaraman, Distributed-Dynamic Capacity Contracting: An overlay congestion pricing framework, *Computer Communications*, special issue on Internet Pricing and Charging, Elsevier Science, Volume 26, Issue 13, Pages 1484-1503, August 2003.
1. G. R. Yaun, D. Bauer, H. L. Bhutada, C. D. Carothers, **M. Yuksel**, and S. Kalyanaraman, Large-Scale Network Simulation Techniques: Examples of TCP and OSPF Models, *ACM SIGCOMM Computer Communication Review (CCR)*, Volume 33, No 3, Pages 27-41, July 2003.

Book Chapter

3. H. Guclu, T. Karabacak, and **M. Yuksel**, Network Modeling of Thin Film and Nanostructure Growth, chapter in *Thin Film Growth: Physics, Materials Science and Applications*, Ed. C. Zexian, Woodhead Publishing, Pages 384-403, 2011.
2. **M. Yuksel**, A. Gupta, K. Kar, and S. Kalyanaraman, Contract-Switching for Managing Inter-Domain Dynamics, chapter in *Next-Generation Internet Architectures and Protocols*, Eds. B. Ramamurthy, G. N. Rouskas, and K. M. Sivalingam, Cambridge University Press, Pages 136-153, December 2010.
1. **M. Yuksel**, A. Gupta, and K. Kar, Dynamic Overlay Single-Domain Contracting for End-to-End Contract Switching, chapter in *Performance Models and Risk Management in Communication Systems*, Ed. N. Gulpinar, P. Harrison, and B. Rustem, Springer, Volume 46, Pages 191-223, November 2010.

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Conference (full paper refereed)

80. P. K. Dey and **M. Yuksel**, Hybrid Cloud Integration of Routing Control and Data Planes, *Proceedings of ACM CoNEXT Cloud-Assisted Network (CAN) Workshop*, Pages 25-30, Irvine, CA, November 2016.
79. P. K. Dey and **M. Yuksel**, CAR: Cloud-Assisted Routing, *Proceedings of IEEE Conference on Network Function Virtualization and Software Defined Networks (NFV-SDN)*, Palo Alto, CA, November 2016.
78. M. R. Khan, S. Bhunia, **M. Yuksel**, and S. Sengupta, LOS Discovery in 3D for Highly Directional Transceivers, *Proceedings of IEEE Military Communications Conference (MILCOM)*, Pages 325-330, Baltimore, MD, November 2016.
77. S. Bhunia, M. R. Khan, S. Sengupta, and **M. Yuksel**, LOS Discovery for Highly Directional Full Duplex RF/FSO Transceivers, *Proceedings of IEEE Military Communications Conference (MILCOM)*, Pages 337-342, Baltimore, MD, November 2016.
76. S. Ibne Mushfique and **M. Yuksel**, Optimal Multi-Element VLC Bulb Design with Power and Lighting Quality Constraints, *Proceedings of ACM MobiCom Workshop on Visible Light Communication Systems (VLCS)*, Pages 7-12, New York, NY, October 2016.
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PROFESSIONAL ACTIVITIES AND SERVICE

Editorial Roles

- Editorial Board, Computer Networks, 2014-Present
- Editor-in-Chief for Special Issues, EAI Endorsed Transactions on Future Internet, 2016-Present
- Editorial Board, Scientific World, 2012-2013

Panelist

- NSF: 1 in 2016, 1 in 2015, 1 in 2014, 1 in 2010, 3 in 2009, 1 in 2008, 1 in 2007

Conference Steering Committees

- IEEE LANMAN, 2015-Present
- IEEE ICC Workshop on Resiliency in Public Safety Communication Systems (RPSCS) 2016

Conference Organization

- Co-chair, ACM CoNEXT CAN Wkshp 2016.
- Co-chair, IEEE WCNC WDPC Wkshp 2014, 2015.
- Co-chair, IEEE LANMAN 2014.
- TPC Co-chair, IEEE LANMAN 2013.
- TPC Track Co-chair, IEEE NAS 2012.
- Publication Co-chair, IEEE LANMAN 2011.

Conference Technical Program Committees

- IEEE INFOCOM 2008-2017.
- IEEE ICNP 2008, 2013.
- IFIP/IEEE NETWORKING 2017
- IEEE ICCCN 2008, 2016.
- IEEE GLOBECOM 2006, 2010-2016.
- IEEE ICC 2005, 2009-2017.
- ACM ICDCN 2017
- ACM VLCS 2016
- IEEE INFOCOM IECCO 2017
- IEEE VTC 2017
- IEEE/ACM COMSNETS 2009-2012, 2014, 2015.
- IEEE/ACM NDM 2013.
- IEEE WCNC 2011, 2013-2015.
- IEEE LCN 2009-2013.
- IEEE WCNC WD5G Workshop 2016
- IEEE INFOCOM MCV 2015
- D2D 2015
- ICIT 2015
- IEEE PIMRC 2012.
- IEEE IPCCC 2012.
- ACM SAC 2012-2014.
- IEEE/ACM GreenCom 2010.
- IEEE SGNI 2010.
- IEEE NanoCom 2009.
- ANT 2010-2012.
- NanoNet 2008, 2009.
- IEEE LANMAN 2008, 2011, 2015-17.
- IEEE ICPADS 2007-2009.
- IEEE UCI 2007.

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- IFIP/IEEE MMNS 2003, 2004.

Invited Talks

32. "Multi-Element Optical Wireless Modules for Mobile Networking and Lighting", *University of Central Florida*, Orlando, FL, April 26, 2016.
31. "Multi-Element Optical Wireless Modules for Mobile Networking and Lighting", *Virginia Commonwealth University*, Richmond, VA, March 14, 2016.
30. "Rethinking Economics of Routing Under Big Data Transfers Between Clouds", *University of Texas at San Antonio*, San Antonio, TX, April 24, 2015.
29. "Routing Economics Under Big Data", *HP Labs*, Palo Alto, CA, June 13, 2014.
28. "Routing Economics Under Big Data", *Cisco Research*, Milpitas, CA, June 10, 2014.
27. "FSO-MANETs: Free-Space-Optical Mobile Ad-Hoc Networks", *Turgut Ozal University*, Ankara, Turkey, May 2014.
26. "FSO-MANETs: Free-Space-Optical Mobile Ad-Hoc Networks", *Florida International University*, Miami, FL, March 2014.
25. "FSO-MANETs: Free-Space-Optical Mobile Ad-Hoc Networks", *University of Maryland at Baltimore County*, Baltimore, MD, February 2014.
24. "Routing Economics Under Big Data", *International Workshop on End-to-end Management of Big Data (BigData)*, Istanbul, Turkey, August 2012.
23. "FSO-MANETs: Free-Space-Optical Mobile Ad-Hoc Networks", *GE Research Center*, Schenectady, NY, May 4, 2010.
22. "Contract-Switching", *NSF Future Internet Summit*, Arlington, VA, October 2009.
21. "Contract-Switching: Value Flows in Inter-Domain Routing", *NSF FIND PI Meeting*, Arlington, VA, April 13, 2009.
20. "Routing and Communication Building Blocks for Multi-hop Wireless Ad-Hoc Networks", *University of Oklahoma at Tulsa*, Tulsa, OK, May 2006.
19. "Routing and Communication Building Blocks for Multi-hop Wireless Ad-Hoc Networks", *SUNY Albany*, Albany, NY, April 2006.
18. "Routing and Communication Building Blocks for Multi-hop Wireless Ad-Hoc Networks", *University of Nevada - Reno*, Reno, NV, March 2006.
17. "Routing and Communication Building Blocks for Multi-hop Wireless Ad-Hoc Networks", *San Francisco State University*, San Francisco, CA, February 27, 2006.
16. "Routing and Communication Building Blocks for Multi-hop Wireless Ad-Hoc Networks", *Arizona State University - West*, Phoenix, AZ, February 2006.
15. "Routing and Communication Building Blocks for Multi-hop Wireless Ad-Hoc Networks", *University of Michigan at Dearborn*, Dearborn, MI, February 2006.
14. "Routing and Communication Building Blocks for Multi-hop Wireless Ad-Hoc Networks", *Wichita State University*, Wichita, KS, May 10, 2006.
13. "An Architecture for Trajectory-Based Routing in Wireless Ad-Hoc Networks", *Hitachi Research*, San Jose, CA, September 6, 2005.
12. "ROSS.Net: A Platform for Integrated, Large-Scale Network Simulation and Experimentation", *GE Research Center*, Schenectady, NY, May 23, 2005.
11. "ROSS.Net: A Platform for Integrated, Large-Scale Network Simulation and Experimentation", *Argonne National Lab*, Chicago, IL, February 16, 2005.
10. "Architectural Issues of Trajectory-Based Routing in Ad-Hoc Networks", *SUNY Albany*, Albany, NY, December 9, 2004.
9. "Architectural Issues of Trajectory-Based Routing in Ad-Hoc Networks", *Bell Labs*, Holmdel, NJ, October 6, 2004.

8. "Architectural Issues of Trajectory-Based Routing in Ad-Hoc Networks", *Drexel University*, Philadelphia, PA, June 11, 2004.
7. "Implementation Issues of Trajectory-Based Routing in Ad-Hoc Networks", *University of Maine*, Orono, ME, May 17, 2004.
6. "Implementation Issues of Trajectory-Based Routing in Ad-Hoc Networks", *Fatih University*, Turkey, April 21, 2004.
5. "Implementation Issues of Trajectory-Based Routing in Ad-Hoc Networks", *Yeditepe University*, Istanbul, Turkey, April 20, 2004.
4. "Implementation Issues of Trajectory-Based Routing in Ad-Hoc Networks", *Bilkent University*, Ankara, Turkey, April 22, 2004.
3. "Implementation Issues of Trajectory-Based Routing in Ad-Hoc Networks", *SUNY Brockport*, Brockport, NY, March 24, 2004.
2. "Implementation Issues of Trajectory-Based Routing in Ad-Hoc Networks", *Rochester Institute of Technology*, Rochester, NY, March 22, 2004.
1. "Implementation Issues of Trajectory-Based Routing in Ad-Hoc Networks", *American University*, Washington, DC, March 17, 2004.

Ph.D. Thesis Committee Chair

- Satish K. Badepalli, "Network Behavior in Thin Film Growth Dynamics", UNR, expected in August 2016.
- Ahmet Soran, "Multi-Core Parallel Routing", UNR, expected in August 2016.
- Mustafa O. Kilavuz, "Application-Specific Topology-Independent Routing for Multi-hop Wireless Networks", UNR, December 2013.
- Abdullah Sevincer, "Transceiver Selection for Multi-Element Free-Space-Optical Communications", UNR, May 2013.
- Hasan Tarik Karaoglu, "Contract Routing Architecture", UNR, August 2012.
- Bilal Gonen, "Probabilistic Trans-Algorithmic Search", UNR, August 2011.
- Suat Mercan, "Virtual Direction Multicast for Overlay Networks", UNR, August 2011.
- Mehmet Bilgi, "Multi-Transceiver Free-Space-Optical Structures for Mobile Ad-Hoc Networks", UNR, December 2010.

M.S. Thesis Committee Chair

- Prasun Dey, "On the Breakeven Points Between Cloud-Assisted and Traditional Routing", UNR, August 2016.
- Sandeep Mathew, "A Device-to-Device Service Sharing Middleware for Heterogeneous Wireless Networks", UNR, December 2015.
- Prabath Palathingal, "Software-Defined Multi-Element VLC Architecture for High Spatial Reuse", UNR, May 2015.
- Mahmudur R. Khan, "GPS-Free Maintenance of A Free-Space-Optical Link Between Two Autonomous Mobiles", UNR, May 2015.
- Engin Arslan, "Network Management Game", UNR, August 2011.
- Akilan Velmurugan, "Virtual Multicast Link via Packet Re-entrance in NS2", UNR, August 2011.
- Anusha Uppaluri, "A Two-Market Inter-ISP Contracting Framework: Bandwidth Allotment Problem", UNR, August 2011.
- Abdullah Sevincer, "On Prototyping Multi-Transceiver Free-Space-Optical Communication Structures", UNR, August 2010.
- Hasan Tarik Karaoglu, "Link-State Contract Routing Protocol", UNR, December 2009.
- Durgesh Rani Kumari, "Ad-Hoc Limited Scale-Free Models for Unstructured Peer-to-Peer Networks", UNR, December 2009.
- Mustafa Omer Kilavuz, "Minimizing Multi-Hop Wireless Routing State under Application-Based Accuracy Constraints", UNR, May 2009.
- Mehmet Bilgi, "Capacity Scaling in Free-Space-Optical Mobile Ad-Hoc Networks", UNR, April 2008.

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M.S. Examining Committee Chair

- John Russell, no thesis, UNR, May 2013.
- Arun Karnati, "Popularity-Based Scale-Free Models for Unstructured Peer-to-Peer Networks", UNR, December 2011.

Ph.D. Thesis Committee Member

- Deepak Tosh, "TBA", UNR, expected in August 2016.
- Suman Bhunia, "Defense Against Intelligent attacker in Cognitive Radio Networks", UNR, expected in August 2016.
- Esra Erdin, "Decentralizing Online Social Networks to Enhance User Privacy", UNR, expected in August 2016.
- Mehmet B. Akgun, "Dual Layer Scale-Free Network Topology Generation", UNR, December 2014.
- Ekrem Karaman, "Boost Matrix Converters in Clean Energy Systems", UNR, January 2014.
- Bingdong Li, "A Real-Time Distributed Network Security System", UNR, December 2013.
- Syam S. Challa, "Indoor Mobile Optical Wireless Antennas for Portable Devices", UNR, December 2012.
- Hakan Kardes, "A Graph Theoretic Perspective on Internet Topology Mapping", December 2012.
- Hasan Aydin, "Educational Success of Gülen-Inspired Schools: The Case of Nigeria", UNR, May 2011.
- Bow-Nan Cheng, "Routing in Wireless Networks with Directional Communication Methods", RPI, May 2008.
- Jayasri Akella, "Building Blocks for Multi-hop Mobile Ad Hoc Networks with Free-Space-Optics", RPI, December 2006.

M.S. Thesis Committee Member

- Ibrahim Ethem Coskun, "Efficient Large Scale Network Topology Measurement", UNR, expected in December 2015.
- Hayreddin Ceker, "Secure Communication in the Smart Grid", UNR, August 2013.
- Esra Erdin, "Anonymous Communication Systems: Usage Analysis and Attack Mechanisms", UNR, May 2012.
- Guoxun Tian, "Complex Network Analysis of Ozone Transport", UNR, May 2012.
- Jeff Naruchitparames, "Enhancing the Privacy of Data Communications within Information-Sensitive Systems", UNR, May 2011.
- Batyr Odeyev, "The Caspian Sea Resources: The Foundation for a Path Forward for the Economic, Political and Social Development of Azerbaijan and Turkmenistan", UNR, January 2011.
- Hakan Kardes, "Graph Data Mining to Construct Sampled Internet Topology Maps", UNR, December 2010.
- Talha Oz, "Cheleby: Internet Topology Collection System", UNR, December 2010.
- Nihan Aldis, "ONIOM Modeling of Si(100) Surface Structure and Reactivity", UNR, January 2009.
- Chris Koch, "The Pragmatics of Request and Apologies: The Second Language Learner", UNR, May 2008.
- Radhika Radhakrishnan, "Genome Data Modeling and Data Compression", UNR, December 2007.
- Hasan Aydin, "The Pragmatics of Request and Apologies: The Second Language Learner", UNR, December 2007.

M.S. Examining Committee Member

- Afrin Shaik, UNR, May 2013.

Service at UNR

- Chair of the Graduate Committee, Fall 2011 – Spring 2014, Fall 2015 – Fall 2016
- Member of the Differential Tuition Fees Committee, Fall 2011 – Spring 2014, Fall 2015 – Fall 2016
- Member of the Web Committee, Fall 2013 – Spring 2014
- Member of the Undergraduate Curriculum Committee, Fall 2006 – Spring 2011
- Member of the Graduate Committee, Fall 2006 – Spring 2011
- Member of the Assessment Committee, Fall 2007 – Spring 2011
- Member of the College Scholarship Committee, 2010, 2011, 2012
- Member of the Faculty Hiring Committee, Spring 2008, Spring 2013, Spring 2016

- Member of the Strategic Planning Committee, Fall 2010
- Member of the Personnel Evaluation Committee, 2006, 2007, 2008, 2012

K-12 Outreach

- President of Board of Trustees, Coral Academy of Science 2008-Present
- Member of Board of Trustees, Coral Academy of Science 2007-Present

Professional Membership and Service

- *Senior Member, Life Member*, ACM
- *Senior Member*, IEEE
- *Member*, Sigma Xi Scientific Society
- *Member*, ASEE
- *Chair*, IEEE Northern Nevada Section, 2014
- *Vice Chair*, IEEE Northern Nevada Section, 2013, 2016

REFERENCES

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