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RESEARCH INTERESTS

Network performance modeling and simulation; stochastic geometry; random networks; molecular nano communication networks; wireless sensor networks.

EDUCATION

PhD, Electrical and Computer Engineering, The University of Texas at Austin USA, 2004

- Dissertation title: *Network Tomography Based on Flow Level Measurements*
- Advisors: Prof. Brian L. Evans and Prof. Gustavo de Veciana

MS, Electrical and Computer Engineering, The University of Texas at Austin USA, 1999

- M.S. report title: *Dynamic Network Management for Service-Driven Networks*
- Advisor: Prof. San-Qi Li

BSEE (Highest Honors), Electrical and Computer Engineering, The University of Texas at Austin USA, 1997

- Technical area: Computer Engineering
- Senior design project: *Web-Based Interface to Texas Instruments TMS320C30 Simulator* (supervised by Prof. Brian L. Evans)

APPOINTMENTS

06/2015—present *Professor, Dept. of Computer Engineering, Eastern Mediterranean University*

09/2009—05/2015 *Associate Professor, Dept. of Computer Engineering, Eastern Mediterranean University*

09/2004 – 09/2009 *Assistant Professor, Dept. of Computer Engineering, Eastern Mediterranean University*

01/2004 – 05/2004, 01/2001 – 08/2003 *Graduate Research Assistant, Dept. of Electrical and Computer Engineering, The University of Texas at Austin*

Developed a statistical methodology to analyze network measurements and to infer which network flows share congested routes in a network. Project supported by The State of Texas Advanced Technology Program. Also, worked in miscellaneous research and development projects involving DSL systems and video conferencing systems. Projects supported by The State of Texas Advanced Technology Program and Texas Instruments.

09/2003 – 12/2003 *Teaching Assistant, Dept. of Electrical and Computer Engineering, The University of Texas at Austin*

Co-taught EE 313 Linear Systems and Signals, a required second-year electrical and computer engineering course, with Prof. Brian L. Evans.

07/1999 – 12/2000 *Software Engineer, National Instruments, Austin, Texas*

Researched and developed new Internet-based technologies for data acquisition.

09/1997 - 05/1999 Graduate Research Assistant, Dept. of Electrical and Computer Engineering, The University of Texas at Austin

Took part in the development of a software tool that integrated network performance modeling with signal processing techniques. Project supported by the National Science Foundation (NSF).

TEACHING EXPERIENCE

CMPE 101 Foundations of Computer Engineering

CMPE 108 Algorithms and Programming (for Civil and Mechanical Engineering majors)

CMPE 112 Programming Fundamentals

CMPE 321 Signals and Systems for Computer Engineers

CMPE 344 Computer Networks

CMPE 448 Modern Networking Concepts (4th year technical elective)

CMPE 466 Computer Graphics (4th year technical elective)

CMPE 474 Performance Analysis of Computer Systems and Networks (4th year technical elective)

CMPE 476 System Simulation (4th year technical elective)

CMPE 542 Advanced Networking (graduate level)

CMPE 547 Queueing Networks for Computer Applications (graduate level)

CMPE 548 Analysis of Computer Communication Networks (graduate level)

CMPE 576 Advanced Systems Simulation (graduate level)

RESEARCH FUNDING

- Research Seed Money Award (3000 USD), Eastern Mediterranean University, Project Title: Methodologies for root-cause analysis of performance problems in next-generation wireless networks, Project Code: EN-05-02-02, 2005-2006
- Support for Scientific Activities in Higher Education (5500 YTL), TRNC Ministry of Education and Culture, Project Title: Resource-efficient network access point deployment in next-generation wireless networks, Project Code: MEKB-05-03, 2005-2006

HONORS AND AWARDS

- Exemplary Reviewer, IEEE Communications Letters, 2015
- Travel Grant, IEEE Communication Society, 2004
- College of Engineering Fellowship, The University of Texas at Austin, 2003
- Best Presentation Award in *Advanced Telecommunication Networks*, a graduate-level course at The University of Texas at Austin, May 2003
- Texas Telecommunications Engineering Consortium Fellowship, 2003
- Travel Grant, Center for Perceptual Systems, The University of Texas at Austin, 2002
- Texas Telecommunications Engineering Consortium Fellowship, 2002
- Discretionary Bonus Award, National Instruments, June 2000
- Arwin A. Dougal Academic Excellence Award, Department of Electrical and Computer Engineering, The University of Texas at Austin, 1997
- College Scholar, The University of Texas at Austin, 1996, 1997
- Engineering Scholar, The University of Texas at Austin, 1995, 1996, 1997
- Full Scholarship, Cyprus-America Scholarship Program, Fulbright Commission, Cyprus, 1993-1997
- Ranked 1st among the graduating class of Turk Maarif Koleji with a GPA of 10.0 / 10.0, Nicosia, Cyprus, 1993
- Certificat D'Initiation aux Etudes Françaises, Les Alliances Françaises de Chypre, 1991
- Certificat Elementaire de Langue Française, Les Alliances Françaises de Chypre, 1990

PROFESSIONAL MEMBERSHIPS

- Senior Member of IEEE and Member of IEEE Communications Society
- Member of ACM

PUBLICATIONS

Journal Papers

1. D. Arifler and D. Arifler, "Monte Carlo Analysis of Molecule Absorption Probabilities in Diffusion-Based Nanoscale Communication Systems with Multiple Receivers," *IEEE Trans. on NanoBioscience*, vol. 16, no. 3, pp. 157-165, Apr. 2017.
2. D. Arifler, "Connectivity Properties of Free Diffusion-Based Molecular Nanoscale Communication Networks," *IEEE Trans. on Communications*, vol. 65, no. 4, pp. 1686-1695, Apr. 2017.
3. M. H. Bazargani and D. Arifler, "Deterministic Model for Pulse Amplification in Diffusion-Based Molecular Communication," *IEEE Communications Letters*, vol. 18, no. 11, pp. 1891-1894, Nov. 2014.
4. D. Arifler, "Optimality of Homogeneous Sensing Range Assignment in Large-Scale Wireless Sensor Network Deployments," *IEEE Communications Letters*, vol. 16, no. 9, pp. 1489-1491, Sep. 2012.
5. D. Arifler, "Link Layer Modeling of Bio-inspired Communication in Nanonetworks," *Nano Communication Networks*, vol. 2, no. 4, pp. 223-229, December 2011.
6. D. Arifler, "Capacity Analysis of a Diffusion-Based Short-Range Molecular Nano-Communication Channel," *Computer Networks*, vol. 55, no. 6, pp. 1426-1434, April 2011.
7. D. Arifler, "Information Theoretic Approach to Detecting Systematic Node Destructions in Wireless Sensor Networks," *IEEE Trans. on Wireless Communications*, vol. 7, no. 11, part 2, pp. 4730-4738, Nov. 2008.
8. D. Arifler, "A Methodology for Root Cause Analysis of Poor Performance in Fixed-Wireless Data Networks," *IEEE Communications Letters*, vol. 11, no. 5, pp. 381-383, May 2007.
9. D. Arifler, G. de Veciana, and B. L. Evans, "A Factor Analytic Approach to Inferring Congestion Sharing Based on Flow Level Measurements," *IEEE/ACM Trans. on Networking*, vol. 15, no. 1, pp. 67-79, Feb. 2007.
10. S. Li, S. Park, and D. Arifler, "SMAQ: A Measurement-Based Tool for Traffic Modeling and Queueing Analysis. Part I - Design Methodologies and Software Architecture," *IEEE Communications Magazine*, vol. 36, no. 8, pp. 56-65, Aug. 1998.
11. S. Li, S. Park, and D. Arifler, "SMAQ: A Measurement-Based Tool for Traffic Modeling and Queueing Analysis. Part II - Network Applications," *IEEE Communications Magazine*, vol. 36, no. 8, pp. 66-77, Aug. 1998.

Conference Papers

1. J. Olaifa and D. Arifler, "Using System-Level Simulation to Evaluate Downlink Throughput Performance in LTE-A Networks with Clustered User Deployments," in *Proc. International Workshop on Link- and System Level Simulations (IWSLS2), Vienna, Austria, July 1, 2016*.
2. S. Ebadinezhad, D. Arifler, K. Bahmani, and E. A. Ince, "Streaming Stored Video Over Multi-Channel Wireless Systems: Scheduler Performance Evaluation," in *Proc. 22nd Signal Processing and Communications Applications Conference (SIU), Trabzon, Turkey, April 23-25, 2014*, pp. 563-566.
3. K. Bahmani, E. A. Ince, and D. Arifler, "Priority-Aware Downlink Frame Packing Algorithm for OFDMA-Based Mobile Wireless Systems," in *Proc. 21st Signal Processing and Communications Applications Conference (SIU), Kyrenia, North Cyprus, April 24-26, 2013*, pp. 1-4.
4. D. Arifler, "Impact of Clustered Failures on Connectivity of Wireless Sensor Networks," in *Proc. 8th Int. Symp. on Computer Networks (ISCN 2008), June 2008*, pp. 11-15, Istanbul, Turkey.
5. M. Badakhshan and D. Arifler, "Simulation Based Analysis of Spreading Dynamics of Malware in Wireless Sensor Networks," in *Proc. Int. Conf. on Sensor Technologies and Applications (SENSORCOMM 2007), October 2007*, pp. 164-169, Valencia, Spain.
6. K. F. Boyacioglu and D. Arifler, "Second-Order Analysis of Formation of Holes in Spatial Point Patterns: Applications in Wireless Sensor Networks," in *Proc. 5th Intl. Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks and Workshops (WiOpt '07), Workshop on Spatial Stochastic Models in Wireless Networks, April 2007*, pp. 1-5, Limassol, Cyprus.

7. M. Assaf and D. Arifler, "Identification of Prominent Features of Sensed Processes in Wireless Sensor Networks: A Spatial Interpolation Based Approach," in *Proc. of 7th Int. Symp. on Computer Networks (ISCN 2006)*, June 2006, pp. 96-100, Istanbul, Turkey.
8. D. Arifler and B. L. Evans, "Factor Analysis of Network Flow Throughput Measurements for Inferring Congestion Sharing," in *Proc. 13th European Signal Processing Conference (EUSIPCO)*, September 2005, Antalya, Turkey.
9. D. Arifler, G. de Veciana, and B. L. Evans, "Inferring Path Sharing Based on Flow Level TCP Measurements," in *Proc. IEEE Int. Conf. on Communications (ICC)*, vol. 4, June 2004, pp. 2054-2059, Paris, France.
10. D. Arifler, G. de Veciana, and B. L. Evans, "Network Tomography Based on Flow Level Measurements," in *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing (ICASSP)*, vol. 2, May 2004, pp. 437-440, Montreal, Canada.
11. D. Arifler and B. L. Evans, "Modeling the Self-Similar Behavior of Packetized MPEG-4 Video Using Wavelet-Based Methods," in *Proc. IEEE Int. Conf. on Image Processing (ICIP)*, vol. 1, September 2002, pp. 848-851, Rochester, New York USA.

Technical Report

1. D. Arifler, C. Duong, B. L. Evans, and S. Gummadi, "Web-Enabled Texas Instruments TMS320C30 Simulator," Technical Report for the 1997 Texas Instruments DSP Solutions Contest.

PRESENTATIONS

1. S. Ebadinezhad, D. Arifler, K. Bahmani, and E. A. Ince, "Streaming Stored Video Over Multi-Channel Wireless Systems: Scheduler Performance Evaluation," *22nd Signal Processing and Communications Applications Conference (SIU)*, Trabzon, Turkey, April 23-25, 2014.
2. K. Bahmani, E. A. Ince, and D. Arifler, "Priority-Aware Downlink Frame Packing Algorithm for OFDMA-Based Mobile Wireless Systems," *21st Signal Processing and Communications Applications Conference (SIU)*, Kyrenia, North Cyprus, April 24-26, 2013.
3. A. Fereidouni and D. Arifler, "Analysis of Connectivity in Diffusion-Based Molecular Nano-Communication Networks," *4th NaNoNetworking (N3) Summit*, Barcelona, Spain, June 21-22, 2012.
4. D. Arifler, "Physical and Link Layer Modeling of Molecular Nano Communication Networks," *3rd NaNoNetworking (N3) Summit*, Barcelona, Spain, June 22-23, 2011.
5. D. Arifler, "Impact of Clustered Failures on Connectivity of Wireless Sensor Networks," *8th Int. Symp. on Computer Networks (ISCN 2008)*, Istanbul, Turkey, June 18-20, 2008.
6. M. Badakhshan and D. Arifler, "Simulation Based Analysis of Spreading Dynamics of Malware in Wireless Sensor Networks," *Int. Conf. on Sensor Technologies and Applications (SENSORCOMM 2007)*, Valencia, Spain, October 14-20, 2007.
7. K. F. Boyacioglu and D. Arifler, "Second-Order Analysis of Formation of Holes in Spatial Point Patterns: Applications in Wireless Sensor Networks," *5th Intl. Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Network and Workshops (WiOpt '07)*, Workshop on Spatial Stochastic Models in Wireless Networks, Limassol, Cyprus, April 16-20, 2007.
8. M. Assaf and D. Arifler, "Identification of Prominent Features of Sensed Processes in Wireless Sensor Networks: A Spatial Interpolation Based Approach," *7th Int. Symp. on Computer Networks (ISCN 2006)*, Istanbul, Turkey, June 16-18, 2006.
9. D. Arifler and B. L. Evans, "Factor Analysis of Network Flow Throughput Measurements for Inferring Congestion Sharing," *13th European Signal Processing Conference*, Antalya, Turkey, September 4-8, 2005.
10. D. Arifler, G. de Veciana, and B. L. Evans, "Inferring Path Sharing Based on Flow Level TCP Measurements," *IEEE Conf. on Communications*, Paris, France, June 20-24, 2004.
11. D. Arifler, G. de Veciana, and B. L. Evans, "Network Tomography Based on Flow Level Measurements," *IEEE Int. Conf. on Acoustics, Speech, and Signal Processing*, Montreal, Canada, May 17-21, 2004.
12. D. Arifler, "Concurrency in Java," Guest Lecture for *Embedded Software Systems*, a graduate-level course at The University of Texas at Austin, February 11, 2004.

13. D. Arifler, "Spatial Random Sampling in Dense Sensor Networks: How Can We Reconstruct or Predict Random Fields in Sensor Networks?" Project presentation for *Advanced Telecommunication Networks*, a graduate-level course at The University of Texas at Austin, May 12, 2003.
14. D. Arifler, "Inference of Path Sharing in Data Networks," *Texas Telecommunications Engineering Consortium Annual Conference*, Arlington, Texas, January 24, 2003.
15. D. Arifler and B. L. Evans, "Modeling the Self-Similar Behavior of Packetized MPEG-4 Video Using Wavelet-Based Methods," *IEEE Int. Conf. on Image Processing*, Rochester, New York USA, September 22-25, 2002.
16. D. Arifler, "Self-Similarity," *Wireless Networking and Communications Group Informal Seminar Series*, The University of Texas at Austin, September 20, 2002.
17. D. Arifler, "VDSL/802.11 Internetworking," *Texas Telecommunications Engineering Consortium Annual Conference*, College Station, Texas, January 25, 2002.
18. D. Arifler, "Dynamic Network Management," Santera Systems, Dallas, Texas, May 10, 1999.

SOFTWARE RELEASES

1. E. Uyguuroglu and D. Arifler, *toptalkers* – Cisco Netflow Log Analysis Software, Copyright © 2005.
2. G. Bernitz, V. Mani, D. Arifler, and B. L. Evans, *IIR Filter Optimization Applet*, Copyright © 2001, The University of Texas.
3. D. Arifler, C. Duong, B. L. Evans, S. K. Marwat, C. M. Moy, and A. Yuan, *Web-Enabled Simulation - An extensible and portable framework for Web-enabled interfaces to simulators and debuggers*, Copyright © 1996-2001, The University of Texas.

MS THESES SUPERVISED AND MS/PhD JURY MEMBERSHIPS

MS Theses Supervised

1. J. S. Wejin, *Experimental Performance Analysis of Multipath TCP*, 2017. (Supervisor: Prof. Hasan Amca)
2. J. O. Olaifa, *User-Location Aware Downlink Performance Analysis of LTE Networks*, 2016.
3. B. A. Shams, *A Simulation Framework for Performance Analysis of Molecular Nano Communication Networks*, 2014.
4. K. M. Hussein, *Design and Implementation of a Mobile Network Management Tool for Wireless Site Surveying*, 2014.
5. S. Ebadinezhad, *Variable Bit Rate Video Workload Modeling for Mobile Broadband Wireless Networks*, 2014.
6. M. H. Z. Bazargani, *Analysis of Molecular Nano Communication Channels with Relays*, 2013.
7. C. J. Ojukwu, *Propagation Delay Models in Bio-Inspired Nanonetworks*, 2013.
8. A. Fereidouni, *Analysis of Connectivity in Diffusion-Based Molecular Nano Communication Networks*, 2013.
9. M. G. Khalaf, *Connectivity Analysis of Large-Scale Wireless Ad Hoc Networks with Heterogeneous Nodes*, January 2010. (Co-supervisor: Prof. Aykut Hocanin)
10. M. Badakhshan, *Analysis of Spreading Dynamics of Malware in Wireless Sensor Networks Based on Spatial Epidemic Models*, Dept. of Computer Engineering, Eastern Mediterranean University, August 2007.
11. M. M. T. Assaf, *Spatial Interpolation Using Computational Geometric Methods in Wireless Sensor Networks*, Dept. of Computer Engineering, Eastern Mediterranean University, June 2006.

PhD Jury Memberships

1. F. Tansu, *An Efficient Vertical Handoff Decision Scheme Between Microcellular and Macrocellular Networks*, 2010.
2. I. Candan, *Performance Analysis of a Time-Threshold Based Bandwidth Allocation Scheme for Cellular Networks*, Dept. of Computer Engineering, Eastern Mediterranean University, 2007.

3. H. Sarper, *A LAN Client Back-End Buffering System Design for Improving the Performance of Video on Demand Systems*, Dept. of Computer Engineering, Eastern Mediterranean University, 2006.

MS Jury Memberships

1. F. O. Babalola, *Analysis of the Impact of Transcript Diversity on Protein Domains of G-Protein-Coupled Receptors (GPCRs) in Human, Mouse and Rat Proteomes: A Data Mining Approach*, 2017.
2. N. Hajarolasvadi, *Computation of an Enriched Set of Predictors for Type 2 Diabetes Prediction*, 2016.
3. O. A. Oluwafemi, *Regional-Based LEACH for Energy Efficiency in Wireless Sensor Networks*, 2015.
4. B. Olabenjode, *Centralized, Anonymous and Secure Peer-to-Peer Messaging on Rendezvous Protocols*, 2015. (Cyprus International University)
5. Z. Korkmaz, *Analysis of a Propagation Model for Molecular Communication in Nanonetworks*, 2014.
6. K. Bahmani, *Priority Aware Frame Packing for OFDMA Systems in Distributed Permutation Mode*, 2013.
7. S. Alagha, *Queuing-Based Dynamic Multi-Guard Channel Scheme for Voice/Data Integrated Cellular Wireless Networks*, 2013.
8. M. Roshanasan, *Performance Evaluation of Routing Protocols in Wireless Mobile Ad Hoc Networks (MANETS) Using OPNET Simulator*, 2012.
9. Y. R. Hijazi, *Combined Monte Carlo and Finite-Difference Time-Domain Modeling for Computational Biophotonics*, Dept. of Computer Engineering, Eastern Mediterranean University, 2008.
10. T. H. Faaya, *Recognition of Facial Expressions and Faces under Different Illumination Conditions and Occlusions*, Dept. of Computer Engineering, Eastern Mediterranean University, 2008.
11. M. Salem, *A Novel Distributed Channel Allocation Algorithm in Cellular Networks with Mobile Base Stations*, Dept. of Computer Engineering, Eastern Mediterranean University, 2008.

PROFESSIONAL AND ACADEMIC ACTIVITIES

- Reviewer for IEEE Transactions on Information Theory, IEEE Journal on Selected Areas in Communications (JSAC), IEEE Transactions on Communications, IEEE Transactions on Wireless Communications, IEEE Transactions on Nanobioscience, IEEE Communication Letters, Performance Evaluation Journal, IEEE Globecom, IEEE ICC, IEEE ICIP, IEEE DSP Workshop
- Member of the ABET Committee, Dept. of Computer Engineering, Eastern Mediterranean University, 2010-2016
- Member of the Curriculum Committee, Dept. of Computer Engineering, Eastern Mediterranean University, 2012-present
- Administrative Board Member of the Advanced Technology Research and Development Institute, Eastern Mediterranean University, 2008-2010
- Member of the Research Committee and FP7, Faculty of Engineering, Eastern Mediterranean University, 2008-2010
- Member of the Graduate Committee, Dept. of Computer Engineering, Eastern Mediterranean University, 2004-2007

REFERENCES

Prof. Brian L. Evans
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 The University of Texas at Austin
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 Austin, TX 78712, USA
 Phone: +1 (512) 232-1457
 E-mail: bevans@ece.utexas.edu

Prof. Gustavo de Veciana
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 The University of Texas at Austin
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 Austin, TX 78712, USA
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 E-mail: gustavo@ece.utexas.edu

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Director, Applied DSP and VLSI Research Group
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