

Moustafa Youssef's Résumé

Egypt-Japan University of Science and Technology (E-JUST) and Alexandria University, Egypt

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Alexandria
Egypt *WWW:* wrc.ejust.edu.eg
- RESEARCH INTERESTS** Mobile and wireless networks, location determination systems, sensor networks, ad-hoc networks, pervasive computing, protocol modelling and analysis, energy efficient protocols, peer-to-peer systems, and computer security.
- EDUCATION**
- Ph.D., Computer Science** (May 2004)
University of Maryland, College Park
- *Horus*: An RF-Based Location Determination System (**Invention of the year award**)
 - M.Sc., Computer Science** (May 2002)
University of Maryland, College Park
 - M.Sc., Computer Science** (1999)
Alexandria University, Egypt
- Performance Enhancement Techniques of a Banyan Network Based Interconnection Structure
 - B.Sc., Computer Science and Automatic Control** (June 1997)
Alexandria University, Egypt (Ranked First on Faculty of Engineering)
 - General Secondary School Certificate** (July 1992)
Egypt (Ranked Third Nationwide)
- GRANTS**
- Microsoft Research Project Hawaii- Moustafa Youssef, 2011.
 - Parallel Networks Architecture (ParaNets)- Moustafa Youssef (Consultant) Carnegie Mellon University, Qatar, 2010.
 - Towards Practical Information Theoretically Secure Authentication and Data Integrity for RFID- Moustafa Youssef (PI) Intel Research, USA, 2010.
 - CellChek: A cost-effective cell phone-based patient monitoring and advising system - Moustafa Youssef (Co-PI) Microsoft Research Grant, 2010.
 - Locationoid: An Accurate Energy-Efficient Location Provider for the Android Platform - Moustafa Youssef (PI) Google Research Award, 2009.
 - Wireless Physical Layer Security- From Theory to Practice - Moustafa Youssef PI, US-Egypt Joint Research Grants.
 - Nuzzer: A Device-free Passive Localization System for Wireless Environments - Moustafa Youssef (PI) Science and Technology Development Fund (STDF), Young Investigator Award, 2008.
 - Energy Efficient Wireless Sensor Networks: A Cooperative Communications Perspective - Moustafa Youssef (Consultant) - Qatar National Research Fund (QNRF), 2008-2009.
 - Symbian Equipment Grant. Symbian Academy, UK, 2008.
 - Providing Physical Security Using Wi-Fi. Technology Development Corporation (TEDCO) grant in collaboration with the Dingman Center for Entrepreneurship, for \$50,000, 2004.

1. Keys through ARQ: Theory and Practice
Yara Omar, Mohammed Abdelatif, Moustafa Youssef, Ahmed Sultan, Hesham Elgamal
IEEE Transactions on Information Forensics & Security, September 2011.
2. A Source Authentication Scheme Using Network Coding
Ahmed Ossama, Tamer Elbatt, and Moustafa Youssef
International Journal of Security and Networks (IJSN), to appear.
3. DNIS: a Middleware for Dynamic Multiple Network Interfaces Scheduling
Ahmed Saeed, Karim Habak, Mahmoud Fouad, Moustafa Youssef
ACM Mobile Computing and Communications Review 14(2): 16-18 (2010). Also presented as a research poster at *ACM MobiCom*, September 2009. [**Second place winner, ACM SIGMobile undergraduate SRC**], 2009.
4. Overlapping Multi-hop Clustering for Wireless Sensor Networks
Moustafa Youssef, Adel Youssef, and Mohammed Younis
IEEE Transactions on Parallel and Distributed Systems, VOL. 20, NO. 12, December 2009 [**Spotlight Paper**].
5. Hidden Anchor: A Lightweight Approach for Physical Layer Location Privacy
Rania Elbadry, Moustafa Youssef, and Ahmed Sultan
Journal of Computer Systems, Networks, and Communications - Special Issue on Lightweight Mobile and Wireless Systems: Technologies, Architectures, and Services (MLWS), [**Invited Paper**].
6. Establishing Overlapped Multi-hop Clusters in Wireless Sensor Networks
Adel Youssef, Mohammed Younis, Moustafa Youssef, and Ashok Agrawala
International Journal of Sensor Networks (IJSNET), to appear. [**Invited Paper**]
7. Formal Specification And Analysis Of PCF Protocol in the 802.11 Standard Using Systems of Communicating Machines
Moustafa Youssef and Raymond Miller
International Journal of Modelling and Simulation, Vol. 28, Issue 3, 2008.
8. The Horus Location Determination System
Moustafa Youssef and Ashok Agrawala
ACM Journal of Wireless Networks (WINET), 14:3 June 2007.
9. Calibration-Free RF-Based Localization Algorithm for Actuator/Sensor Networks using Particle Filters
Aly El-Osery, Wael Abd-Almageed and Moustafa Youssef
IEEE Antennas and Propagation Magazine, August, 2006.
10. Towards an Optimal Strategy For WLAN Location Determination Systems
Moustafa Youssef and Ashok Agrawala
In the International Journal of Modelling and Simulation, Vol. 27, Issue 1, 2007.
11. Location-Clustering Techniques for Energy-Efficient WLAN Location Determination Systems
Moustafa Youssef and Ashok Agrawala
In the International Journal of Computers and Applications, Vol. 28, Issue 3, 2006.
12. Energy-Aware Management for Cluster-Based Sensor Networks
Mohamed Younis, Moustafa Youssef and Khaled Arisha
Journal of Computer Networks, Vol. 43, No. 5, pp. 539-694 (5 December 2003).
13. Instance-Based Networking: A Communication Paradigm for Mobile Applications
Moustafa Youssef, Liviu Iftode, et. al.
Mobile Computing and Communications Review, Vol. 7, No. 4, pp. 66-67, October 2003.
Also presented as a research poster at *ACM MobiCom*, September 2003.

14. The ABC..I of 802.11 WLANs
Moustafa Youssef and Arunchandar Vasam
ACM Crossroads, Summer 2003 - 9.4.
15. Rover: Scalable Location-Aware Computing
Moustafa Youssef, Ron Larsen, A. Udaya Shankar, Ashok Agrawala, et. al.
IEEE Computer, October 2002.
16. Performance Enhancement Techniques of a Banyan Network Based Interconnection Structure
Moustafa Youssef, Mohammed El-Derini, and Hussien Aly
Alexandria Engineering Journal (AEJ), September 1999.

Under Submission

17. Nuzzer: A Large-Scale Device-Free Passive Localization System for Wireless Environments
Moustafa Seifeldin, Ahmed Saeed, Ahmed E. Kosba , Amr El-Keyi, and Moustafa Youssef.
Under submission to the IEEE Transactions on Mobile Computing.
18. Hidden Anchor: A Physical Layer Location Privacy Algorithm for Hybrid Wireless Sensor Networks
Rania El-Badry, Moustafa Youssef, and Mohamed Eltoweissy. Under submission to the IEEE Transactions on Computers.
19. CellSense: An Accurate Energy-Efficient GSM Positioning System
Mohamed Ibrahim and Moustafa Youssef. Under submission to the IEEE Transactions on Vehicular Communication.
20. Opportunistic Secrecy with a Strict Delay Constraint
Karim Khalil, O. Ozan Koyluoglu, Hesham El Gamal, and Moustafa Youssef. Under submission to the IEEE Transactions on Information Theory.
21. The Two Way Wiretap Channel: Theory and Practice
Aly El Gamal, O. Ozan Koyluoglu, Moustafa Youssef, and Hesham El Gamal. Under submission to the IEEE Transactions on Information Theory.

SELECTED PUBLICATIONS – CONFERENCES

1. MSR: A Multipath Secure Reliable Routing Protocol for WSNs
Mariam Moustafa, Moustafa Youssef, and Nazih Elderini
The 9th ACS/IEEE International Conference on Computer Systems and Applications, AICCSA 2011.
2. SANC: Source Authentication Using Network Coding
Ahmed Ossama, Tamer Elbatt, and Moustafa Youssef
The First IEEE International Workshop on Security in Computers, Networking and Communications. In conjunction with the IEEE InfoCom 2011.
3. Practical Provably Secure Communication for Half-Duplex Radios
Ahmed Elmorsy, Mohamed Nour, Mohamed Elsabagh, Moustafa Youssef
IEEE ICC 2011.
4. A Hidden Markov Model for Localization Using Low-End GSM Cell Phones
Mohamed Ibrahim and Moustafa Youssef
IEEE ICC 2011.
5. ARQ Security in RFID Networks
Mohamed Elsabagh, Moustafa Youssef, Hesham Elgamal
IEEE ICC 2011 Physical Layer Security Workshop.
6. A New Routing Metric and Protocol for Multipath Routing in Cognitive Networks'
Islam Beltagy, Moustafa Youssef, and Mohamed El-Derini
IEEE WCNC 2011.

7. ARQ Security in Wi-Fi and RFID Networks
Yara Abdallah, Mohamed Elsabagh, Moustafa Youssef, and Hesham El Gamal
Forty-Eighth Annual Allerton Conference Sept 29 - Oct 1, 2010, University of Illinois at Urbana-Champaign, IL, USA. [**Invited Paper**]
8. CellSense: A Probabilistic RSSI-based GSM Positioning System
Mohamed Ibrahim and Moustafa Youssef
IEEE Globecom 2010.
9. GAC: Energy-Efficient Hybrid GPS-Accelerometer-Compass GSM Localization
Moustafa Youssef and Mohamed Yosef and Mohamed El-Derini
IEEE Globecom 2010.
10. Poster: Automatic Generation of Radio Maps for Localization Systems
Ahmed Elerian, Mohamed Elsabagh, and Moustafa Youssef
MOBIQUITOUS - 2010.
11. Propagation Modeling for Accurate Indoor WLAN RSS-based Localization
Karim Elkafrawy, Moustafa Youssef, Amr Elkeyi, and Ayman Naguib
IEEE Vehicular Technology Conference'10.
12. A Deterministic Large-Scale Device-Free Passive Localization System for Wireless Environments
Moustafa Anwar and Moustafa Youssef
The 2nd workshop on Affect and Behaviour Related Assistance in Support for the Elderly in conjunction with The Third International Conference on Pervasive Technologies Related to Assistive Environments, PETRA2010.
13. HyberLoc: Providing Physical Layer Location Privacy in Hybrid Sensor Networks
Rania Elbadry, Ahmed Sultan, and Moustafa Youssef
IEEE ICC'10 Ad-hoc, Sensor and Mesh Networking Symposium.
14. New Achievable Rate Regions for the Two Way Wiretap Channel
Aly El Gamal, Onur Koyluoglu, Moustafa Youssef, and Hesham El Gamal
IEEE Information Theory Workshop, 2010.
15. Hidden Anchor: Providing Physical Layer Location Privacy in Hybrid Wireless Sensor Networks
Rania El-Badry, Moustafa Youssef, and Mohamed Eltoweissy
IEEE NTMS - Security Track, 2009.
16. Analysis of a Device-free Passive Tracking System in Typical Wireless Environments
Ahmed Kosba, Ahmed Abdelkader, and Moustafa Youssef
IEEE NTMS - Mobility Track, 2009.
17. CellNet:A Bottom-Up Approach to Network Design
Hoda Hassan, Mohamed Eltoweissy, and Moustafa Youssef
IEEE NTMS - New Technologies and Services Track, 2009.
18. ARQ Secrecy: From Theory to Practice
Yara Omar, Moustafa Youssef, and Hesham El Gamal
IEEE Information Theory Workshop, 2009. [**Invited Paper**]
19. Randomization for Security in Half-Duplex Two-Way Gaussian Channels
Aly Elgamal, Moustafa Youssef, and Hesham El Gamal
IEEE Globecom 2009 Communication Theory Symposium.
20. Secrecy-Via-Feedback: From Theory to Practice
Yara Omar, Aly El Gamal, Moustafa Youssef, and Hesham El Gamal
Information Theory and Applications (ITA'09) Workshop 2009.

21. On the Delay Limited Secrecy Capacity of Fading Channels
Karim Khalil, Moustafa Youssef, Onur Ozan Koyluoglu, and Hesham El Gamal
IEEE International Symposium on Information Theory, 2009.
22. Distributed Efficient Storage Algorithms for Large-Scale Wireless Sensor Networks
Salah A. Aly, Mahmoud Zidan, and Moustafa Youssef
IEEE ICC 2009 - Ad-Hoc and Sensor Networking Symposium.
23. Smart Devices for Smart Environments: Device-free Passive Detection in Real Environments
May Moussa and M. Youssef
The Second IEEE International Workshop on Intelligent Pervasive Devices (PerDev09), co-located with Percom 2009.
24. Towards Evolving Sensor Actor Networks
R. Eltaras, M. Eltoweissy, and M. Youssef
The Second IEEE Workshop on Mission Critical Networking, in conjunction with IEEE Infocom 2008.
25. Federated Protocol Design
H. Mamdouh, M. Eltoweissy, and M. Youssef
Infocom 2008 - Students' Workshop.
26. Challenges: Device-free Passive Localization for Wireless Environments
Moustafa Youssef, Matthew Mah, and Ashok Agrawala

The Thirteenth Annual International Conference on *Mobile Computing and Networking* (MobiCom 07), Montreal, QC, Canada, September 9-14, 2007. [**Most popular challenge paper award**]
27. On the Accuracy of Multi-hop Relative Location Estimation in Wireless Sensor Networks
Adel Youssef, Mohamed Younis, Moustafa Youssef, and Ashok Agrawala

The 2007 ACM International Wireless Communications and Mobile Computing Conference (IWCMC 2007), August 12-16, 2007, Honolulu, Hawaii.
28. A Taxonomy of Localization Schemes for Wireless Sensor Networks
Adel Youssef and Moustafa Youssef
The 2007 International Conference on Wireless Networks (ICWN'07), Las Vegas, Nevada, June 25-28, 2007.
29. Rover: An Integration and Fusion Platform to Enhance Situational Awareness
Christian B Almazan, Moustafa Youssef, and Ashok Agrawala
The First International Workshop on Research Challenges in Next Generation Networks for First Responders and Critical Infrastructures (NetCri07), April 13th, 2007, New Orleans, Louisiana, April 13.
30. PinPoint: An Asynchronous Time-Based Location Determination System
Moustafa Youssef, Adel Youssef, Chuck Rieger, Udaya Shankar, and Ashok Agrawala
Fourth International Conference on Mobile Systems, Applications, and Services (*MobiSys 2006*), Uppsala, Sweden, June 19-22, 2006.
31. Distributed Formation of Overlapping Multi-hop Clusters in Wireless Sensor Networks
Mohammed Younis, Adel Youssef, Moustafa Youssef, and Ashok Agrawala
the 2006 IEEE GLOBECOM Conference, San Francisco, California, November 27– December 1, 2006. [**Best paper runner-up**]
32. Deriving Consistent Time Base Using Local Clock Information
Moustafa Youssef and Ashok Agrawala
the 2006 IEEE 1588 Conference, Gaithersburg, MD, October 2-4, 2006.

33. The Horus WLAN Location determination System
Moustafa Youssef and Ashok Agrawala
Third International Conference on Mobile Systems, Applications, and Services (*MobiSys 2005*),
Seattle, WA, USA, June 2005.
34. Multivariate Analysis for WLAN Location Determination Systems
Moustafa Youssef, Mohamed Abdallah, and Ashok Agrawala
The Second Annual International Conference on Mobile and Ubiquitous Systems: Networking
and Services (Mobiquitous 2005) July 17-21, 2005, San Diego, California.
35. A Location-Determination System for Enabling M-Commerce Applications
Moustafa Youssef and Ashok Agrawala
International Business Information Management Conference (5th IBIMA), December 13-16,
2005, Cairo, Egypt.
36. IEEE 802.11 Active Probing Mechanism: Analysis and Enhancements
Moustafa Youssef, Layla Shahamat, and Ashok Agrawala
International Conference on Wireless Networks, Communications, and Mobile Computing Spon-
sors (Wirelesscom 2005), June 13-16, 2005, Hawaii, USA.
37. Characterizing IEEE 802.11 Traffic: The Wireless Side
Jihwang Yeo, Moustafa Youssef, Tristan Henderson, and Ashok Agrawala International Work-
shop on Wireless Traffic Measurements and Modeling (WiTMeMo '05), In conjunction with
Mobisys 2005, Seattle, WA, USA, June 2005.
38. Handling Samples Correlation in the Horus System
Moustafa Youssef and Ashok Agrawala
IEEE Infocom, Hong Kong, March 2004.
39. A Framework for Wireless LAN Monitoring and Its Applications
Jihwang Yeo, Moustafa Youssef, and Ashok Agrawala
ACM Workshop on Wireless Security (WiSe'04) in conjunction with ACM MobiCom 2004,
Philadelphia, PA, US, October 2004.
40. On the Optimality of WLAN Location Determination Systems
Moustafa Youssef and Ashok Agrawala
Communication Networks and Distributed Systems Modelling and Simulation (CNDS'04) Con-
ference, January 18-24 2004, San Diego, California.
41. Continuous Space Estimation for WLAN Location Determination Systems
Moustafa Youssef and Ashok Agrawala
IEEE Thirteenth International Conference on Computer Communications and Networks (IC3N'04),
Chicago, IL USA, October 11-13, 2004.
42. WLAN Location Determination via Clustering and Probability Distributions
Moustafa Youssef, Ashok Agrawala, A. Udaya Shankar
IEEE International Conference on Pervasive Computing and Communications (PerCom'03),
Fort Worth, Texas, March 23-26, 2003.
43. Implementation of a Scalable Context-Aware Computing System
Moustafa Youssef, A. Udaya Shankar, Ashok Agrawala et al.
Personal Wireless Communications (PWC'03), September 23-25, 2003 - Venice, Italy.
44. Specification and Analysis of the DCF and PCF Protocols in the 802.11 Standard Using
Systems of Communicating Machines
Moustafa Youssef, Arunchandar Vasan, and Raymond Miller
The 10th *IEEE International Conference on Network Protocols (ICNP'02)*, Paris, France,
November 12-15, 2002.
45. Efficient Aggregation of Delay-Constrained Data in Wireless Sensor Networks
Kemal Akkaya, Mohamed Younis, and Moustafa Youssef

- The *ACS/IEEE workshop on Internet Compatible QoS in Ad hoc Wireless Networks (IC-QAWN'05)*, Cairo, Egypt, January 2005.
46. Energy-Aware Routing in Cluster-Based Sensor Networks
Mohamed Younis, Moustafa Youssef, and Khaled Arisha
The 10th *IEEE/ACM International Symposium on Modelling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS'02)*, Fort Worth, Texas, October 2002.
 47. ATP: Autonomous Transport Protocol
Moustafa Youssef, Liviu Iftode, et. al.
IEEE Midwest Symposium on Circuits and Systems, December 2003, Cairo, Egypt.
 48. Small-Scale Compensation for WLAN Location Determination Systems
Moustafa Youssef, Ashok Agrawala
IEEE Wireless Communications and Networking Conference (WCNC'03) New Orleans, Louisiana, March 16-20, 2003.
 49. Performance Evaluation of an Energy-Aware Routing Protocol for Sensor Networks
Moustafa Youssef, Mohamed Younis, and Khaled Arisha
The *International Conference on Wireless Networks (ICWN'02)*, Las Vegas, Nevada, June 2002.
 50. Energy-Aware TDMA-Based MAC for Sensor Networks
Khaled Arisha, Moustafa Youssef, and Mohamed Younis
The *IEEE Integrated Management of Power Aware Communications, Computing and Networking (IMPACCT'02)* New York City, New York, May 2002.
 51. A Constrained Shortest-Path Energy-Aware Routing Algorithm for Wireless Sensor Networks
Moustafa Youssef, Mohamed Younis, and Khaled Arisha
The *IEEE Wireless Communications and Networking Conference (WCNC)*, Orlando, Florida, March 2002.
 52. Cross-Language Information Retrieval: Layout Strategies for Gloss Translation
Eiman Elnahrawy, Nagia Ghanem, Moustafa Youssef
Workshop on Evaluation of Interactive Cross-Language Information Retrieval, University of Maryland, College Park, May 2001.
 53. Structure and Performance Evaluation of a Replicated Banyan Network based ATM Switch
Moustafa Youssef, Mohammed El-Derini, and Hussien Aly
The *IEEE ISCC'99*, Sharm El-Sheikh, Egypt, June 1999.

Refereed Posters

54. DNIS: A Middleware for Dynamic Multiple Network Interface Scheduling
Ahmed Saeed, Karim Habak, Mahmoud Fouad, and Moustafa Youssef
The Fifteenth Annual International Conference on *Mobile Computing and Networking (MobiCom'09)*, Beijing, China, September 21-26. [**Second place winner, ACM SIGMobile undergraduate SRC**]
55. Autonomous Transport Protocol
Moustafa Youssef, Liviu Iftode et. al.
The Eleventh Annual *International Conference on Network Protocols*, (ICNP'03), Atlanta, GA, USA, November 4-7, 2003.
56. IBN: A Communication Paradigm for Mobile Applications
Moustafa Youssef, Liviu Iftode et. al.
The Ninth Annual International Conference on *Mobile Computing and Networking (MobiCom'03)*, San Diego, CA, USA, September 14-19, 2003.
57. Rover Technology: Implementation of a Scalable Context-Aware Computing System
Moustafa Youssef, A. Udaya Shankar, Ashok Agrawala et al.

The First *International Conference on Mobile Systems, Applications, and Services* (MobiSys'03), San Francisco, CA, USA, May 5-8, 2003.

RESEARCH DEMOS

- DNIS: Demonstrating Dynamic Multiple Network Interface Scheduling
Ahmed Saeed, Karim Habak, Mahmoud Fouad, and Moustafa Youssef
Research Demo: Mobicom 2009.
- Nuzzer-D: Demonstrating Device-free Passive Localization for Wireless Environments
Ahmed El-Roby, Mohamed Fahmy, May Moussa, and Moustafa Youssef
Research Demo: Mobicom 2008.
- HyberLoc: Demonstrating Secure Localization In Hybrid Sensor Networks
Mohamed Adel, Mohamed Ibrahim, Karim Abulmakarem, Moustafa Youssef, and Mohamed Eltoweissy
Research Demo: Mobicom 2008.

BOOKS AND BOOKS CHAPTERS

- Automatic Generation of Radio Maps for Localization Systems
Ahmed Elerian, Mohamed Elsabagh, and Moustafa Youssef
Lecture Notes of ICST (LNICST) series, to appear.
- Handling QoS Traffic in Wireless Sensor Networks
Kemal Akkaya, Mohamed Younis, and Moustafa Youssef
Encyclopedia on Ad Hoc and Ubiquitous Computing, World Scientific, to appear.
- A Survey of Indoor Location Determination Systems
Moustafa Youssef
Encyclopedia of Geographical Information Systems, Springer 2007.
- System-Level Power Optimization for Wireless Multimedia Communication: Power Aware Computing
Chapter 2: "Energy-Aware TDMA-Based MAC for Sensor Networks"
Khaled Arisha, Moustafa Youssef, and Mohamed Younis
Kluwer Academic Publishers, ISBN: 140207204X, December 2002.
- Implementation of a Scalable Context-Aware Computing System
Moustafa Youssef, A. Udaya Shankar, Ashok Agrawala, et al
Lecture notes in computer science ISSN 0302-9743 .

OTHER TECHNICAL REPORTS

1. On the Delay-Limited Secrecy Capacity
Karim Aboumakarem, Moustafa Youssef, and Hesham Elgamel
WINC TR-1006, Wireless Intelligent Networks Center, Nile University, Egypt, September 2008.
2. Overlapping Multihop Clustering for Wireless Sensor Networks
Moustafa Youssef, Adel Youssef, and Mohamed Younis
WINC TR-1001, Wireless Intelligent Networks Center, Nile University, Egypt, September 2008.
3. Secure Interactive Communication in Wireless Sensor Networks
Aly Elgamel, Moustafa Youssef, and Hesham Elgamel
WINC TR-1004, Wireless Intelligent Networks Center, Nile University, Egypt, September 2008.
4. Karim Abulmakarem, Moustafa Youssef, and Hesham Elgamel
WINC TR-1005, Wireless Intelligent Networks Center, Nile University, Egypt, December 2008.
5. The Overlapped K-hop (OK) Clustering Algorithm
Adel Youssef, Moustafa Youssef, Mohamed Younis, and Ashok Agrawala
CS-TR 4735, Department of Computer Science, University of Maryland, College Park, July 2005.

6. The IEEE 802.11 Active Probing Mechanism: Analysis and Enhancements
Moustafa Youssef, Layla Shahamat, and Ashok Agrawala
CS-TR, Department of Computer Science, University of Maryland, College Park, March 2004.
7. Characterizing the IEEE 802.11 Traffic: The Wireless Side
Jihwang Yeo, Moustafa Youssef, and Ashok Agrawala
CS-TR 4570, Department of Computer Science, University of Maryland, College Park, March 2004.
8. ATP: Autonomous Transport Protocol
Moustafa Youssef, Liviu Iftode, et. al.
CS-TR 4483, Department of Computer Science, University of Maryland, College Park, May 2003.
9. Handling Samples Correlation in the Horus System
Moustafa Youssef and Ashok Agrawala
CS-TR 4506, Department of Computer Science, University of Maryland, College Park, June 2003.
10. On the Optimality of WLAN Location Determination Systems
Moustafa Youssef and Ashok Agrawala
CS-TR 4459, Department of Computer Science, University of Maryland, College Park, March 2003.
11. Horus: An RF-Based Location Determination System
Moustafa Youssef and Ashok Agrawala
Research Review Poster, University of Maryland, College Park, March 2003.
12. Analyzing the Point Coordination Function of the IEEE 802.11 WLAN Protocol using a Systems of Communicating Machines Specification
Moustafa Youssef and Raymond Miller
CS-TR 4357, Department of Computer Science, University of Maryland, College Park, March 2002.
13. A Probabilistic Clustering-Based Indoor Location Determination System
Moustafa Youssef, Ashok Agrawala, A. Udaya Shankar, and Sam H. Noh
CS-TR 4350, Department of Computer Science, University of Maryland, College Park, March 2002.
14. Location Based Authentication for Wireless Networks
William Arbaugh, Moustafa A. Youssef, Narendar Shankar, Arunesh Mishra, Ashok Agrawala
Research Review Day 2002 poster, University of Maryland at College Park, March 2002.
15. Rover Technology: Enabling a Location-Aware Computing Environment
Moustafa Youssef, Ron Larsen, A. Udaya Shankar, Ashok Agrawala, et. al.
CS-TR 4312, Department of Computer Science, University of Maryland, College Park, December 2001.
16. Universal Usability: Cross-Language Information Retrieval
Moustafa Youssef
Department of Computer Science, University of Maryland, College Park, April 2001.
17. Cross-Language Information Retrieval: Layout Strategies for Gloss Translation
Eiman M. Elnahrawy, Nagia M. Ghanem, and Moustafa Youssef
Department of Computer Science, University of Maryland, College Park, 2001.

INVITED TALKS

- Locationoid: An Accurate Energy-Efficient Location Provider for the Android Platform. University of Maryland, November 2010.
- Recent Developments in Localization Systems. University of Minnesota, USA, September 2010.

- Locationoid: An Accurate Energy-Efficient Location Provider for the Android Platform. Google Inc., San Francisco, September 2010.
- HyberLoc: Physical Layer Location Privacy in Hybrid Sensor Networks. MIT, June 2010.
- Recent Developments in Localization Systems. First Workshop on Mobile Computing Systems and Applications, IT Sector Board in the Supreme Council of Universities, Cairo, Egypt, October, 2010.
- Recent Developments in Localization Systems. IEEE Day, Alexandria, Egypt, October 2010.
- CellSense: An Accurate Energy-Efficient Localization for GSM Networks, Google Faculty Summit, Switzerland, February 2010.
- Location Determination Systems for Wireless Networks, Qualcomm Inc., San Francisco, October 2009.
- Wireless Sensor Networks. IEEE's "Interact with Today's World", Bibliotheca Alexandrina, Egypt, 2009.
- Location Determination Technologies. VT-MENA, Alexandria, Egypt, 2009.
- Challenges: Device-free Passive Localization for Wireless Environments. The Symposium on Computational Intelligence and smart Environments, GUC, Egypt, July 2009.
- Device-free Passive Localization for Wireless Environments. Google Inc., San Francisco, September 2008.
- Device-free Passive Localization for Wireless Environments. Ohio State University, September 2008.
- Device-free Passive Localization for Wireless Environments. Ubiquitous Computing: Sensor and Wireless Sensor Networks Workshop, Cairo, Egypt, December 2008.
- Security for Ubiquitous Computing. Virginia Tech, March 2007.
- Security for Ubiquitous Computing. Virginia Tech, March 2007.
- Security in Location Determination Techniques: Are you where you say you are? Virginia Tech, April 2006.
- The Horus WLAN Location Determination System. Old Dominion University, December 2005.
- Location Determination Systems for Sensor Networks. University of Maryland, Baltimore County, November 2005.
- The Horus WLAN Location Determination System. Catholic University of America, March 2005.
- Horus: A WLAN-Based Indoor Location Determination System. Rutgers University, October 2004.
- Horus: A WLAN-Based Indoor Location Determination System. University of Maryland, Baltimore County, September 2004.
- Horus: A WLAN-Based Indoor Location Determination System. Alexandria University, Egypt, January 2004.
- A Tutorial for the 802.11 Standard. Alexandria University, Egypt, January 2003.
- A Tutorial for the 802.11 Standard. Syschat, University of Maryland at College Park, October 2001.

HONORS AND
AWARDS

- TWAS-AAS-Microsoft 2010 Award, November 2010.
- Listed, Who's Who in the World, 2011.
- Listed, Who's Who Among Executives and Professionals: 2011 as "one of the leading achievers from around the globe".
- The IEEE Transactions of Parallel and Distributed Systems: Spotlight Paper for the December 2009 issue.
- The Fifteenth ACM Annual International Conference on *Mobile Computing and Networking* (Mobicom'09): Second place winner, ACM SIGMobile undergraduate student research competition, September 2009.
- The Thirteenth ACM Annual International Conference on *Mobile Computing and Networking* (Mobicom'07): Most popular challenge paper award, September 2007.
- The 2006 IEEE GLOBECOM Conference: Best paper runner-up, December 2006.
- Washington Times Newspaper: "Technology of Tracking," Horus work cited, March 10, 2005.
- Scientific American Magazine: "Seeking Better Web Searches," Rover work cited, February 2005.
- Marquis Who's Who in America: Listed with Biography in "Who is Who in America 2005".
- Office of Technology Commercialization, University of Maryland: Invention of the year award for the Horus work, April 2004.
- National Science Foundation: InfoCom 2004 Travel Grant.
- New York Times Newspaper: "Where Is Everybody? The Wireless Network Might Know," Horus work cited, June 19 2003.
- University of Maryland, College Park: Elected member for the honor society Phi Kappa Phi, April 2002.
- ACM SigComm: Travel grant, 2002.
- University of Maryland, College Park: Graduate Fellow, Computer Science Department, 2000-2004.
- Egyptian Ministry of Education: Taha Hussien Medal of Honor, August 1999.
- Alexandria University, Egypt: Prof. Abdelsamie Moustafa award, and Prof. Naim Aboutaleb award, June 1997. (for being ranked first on the Faculty of Engineering and the Computer Science Department respectively)
- General Egyptian Society For the Talented: Society Certificate of Honor, August 1997.
- PC-World Middle East Magazine: First prize in the annual contest of the Magazine, June 1994-1996.
- Alexandria University, Egypt: Faculty Certificate of Honor, 1993-1997.
- Egyptian Ministry of Education: Ministry Certificate of Honor, August 1992. (For being ranked Third Nationwide in the General Secondary School Certificate exam)

INVENTIONS AND
PATENTS

1. Method and System for Determining User Location in a Wireless Communication Network
Moustafa Youssef and Ashok Agrawala
(Invention of the year award 2003, Office of Technology Commercialization, UMD)
U.S. patent no 7,406,116, issued July 29, 2008.
2. Energy-Aware Network Management
Mohamed Younis , Moustafa Youssef, and Khaled Arisha
US-Patent no. 7,277,414, issued October 2, 2007.
3. Probabilistic Energy-Efficient Accurate RSSI-based Localization for Cell Phones
Moustafa Youssef and Mohamed Ibrahim
Patent Application No. 61/384,251, USA.
4. ARQ Secrecy: From Theory to Practice
Hesham El Gamal, Moustafa Youssef and Yara Omar
Patent Application No. 61/249,435, USA.
5. The Cyclone Timing Technology
Ashok Agrawala, Moustafa Youssef and Bao Trinh
(Invention of the year award 2000, Office of Technology Commercialization, UMD)
Invention Disclosure IS-2006-096, University of Maryland, College Park, 2006.
6. Enhancements to the Horus WLAN Location Determination System
Moustafa Youssef and Ashok Agrawala
Invention Disclosure IS-2004-092, University of Maryland, College Park, September 2004.
7. Koolspan Technology: Wi-Fi Security at the Edge
Kamel Kevin, Moustafa Youssef, Jaime Lafleur-Vetter, and Ashok Agrawala
Invention Disclosure IS-2004-008, University of Maryland, College Park, February 2004 (US-
Patent pending).
8. Nuzzer Technology: Providing Physical Security Using Wi-Fi
Leila Shahamatdar, Moustafa Youssef and Ashok Agrawala
Patent application no. 20050055568, March 10, 2005 (US-Patent pending).

WORK
EXPERIENCE

Egypt-Japan University of Science and Technology (E-JUST), Egypt (Fall 2010- Present)
Assistant Professor

Nile University, Egypt (Spring 2008- Summer 2010)
Assistant Professor

Alexandria University, Egypt (Fall 2007- Present)
Assistant Professor

University of Maryland at College Park (Fall 2000- Fall 2007)
Research Assistant and *Research Associate* in the Maryland Information and Network Dynamics
lab, Teaching Assistant.

Research

- Design and implementation of the PinPoint location determination system.
- Design and implementation of the Horus WLAN location determination system.
- Design and implementation of the Nuzzer location determination system.
- Design and implementation of the Cyclone timing technology.

- Design and implementation of a wireless monitoring technique for traffic analysis and intrusion detection in 802.11-based networks.
- Design and implementation of the Rover contextaware system.
- Design and implementation of the Instance-Based Networking paradigm to support peer-to-peer applications.
- Design and Implementation of the Autonomous Transport Protocol that support transparent network users mobility.
- Design and implementation of a location-based authentication system.
- Modelling and analysis of the 802.11 protocol using the systems of communicating machines approach.

Systems / Software Tools

- A new device driver for the Wavelan IEEE/Orinoco card under Linux. The new driver is the first driver to return the signal strength measured from all the access points. *Currently part of the Linux kernel for handheld devices.*
- A general API for interfacing with any device driver that supports the wireless extensions under Linux. (The API is the only work cited whose author is an individual under IBM wireless tools page (<http://www-106.ibm.com/developerworks/views/wireless/downloads.jsp>) [Last Accessed 03/09/05])
- A device driver for the *Schlumberger Smart Card Readers - Reflex 20* under FreeBSD.
- A modified FreeBSD kernel to better support polling based interrupt handling.
- A shared library for training and solving Hidden Markov Models. The library is written in C++ with an interface with Matlab math libraries. The shared library has been tested as an extension to Linux GNumeric.
- A bottom-up parser using LISP.
- A multithreaded HTTP server supporting servlets using Java.
- A distributed chat room using Javas RMI.
- Enhancements to the OpenGL graphic pipeline (including View Frustum Culling, Quantized Back Face Culling, and converting a model represented by a triangle mesh to an equivalent one represented by triangle fans.)
- A distributed directory namespace. The project included designing a new searching algorithm for the nodes in the namespace.

Alexandria University, Egypt

(Fall 1997-Spring 2000)

Researcher, Lecturer

Research

- Design and implementation a Banyan-network based ATM switch.

Systems/ Software Tools

- Installation of Alexandria University Intranet.
- Requirement analysis and implementation of the database system for performing the control operations and preparation of final results of the preparatory year students of the Faculty of Engineering.
- Requirement analysis and implementation of the database system for the distribution of the preparatory year students of the Faculty of Engineering among departments.
- Modification the Kernel of a Multiprogramming Operating System (KMOS) to allow multiple priorities and to provide accounting functions to the users.
- Design and implementation of an Arabic Web Browser under Windows 95 operating system.

- Design and Implementation of a front-end compiler to convert from Pascal Language to C Language.
- Design and implementation of an Automatic Control Programs Package including: signal flow graph analyzer, root locus plotter, and analyzer, stability analyzer, and Bode plot and frequency domain analyzer.

Abu-Kir Fertilizers Company, Egypt (Fall 1999)
Consultant

- Installation of the company's ATM network.

NCR, Egypt (Fall 1999)
Lecturer

- Giving a course in TCP/IP concepts.

Fine Foods Group, Egypt (Fall 1997)
Consultant

- Design and implementation of the Payroll system of the Group.

PROFESSIONAL
EXPERIENCE

- Area Editor, ACM Mobile Computing and Communications Review, 2010- present.
- Co-Guest Editor, The IEEE Journal on Selected Areas in Communications, Special Issue on Mission-Critical Networking.
- Technical Program Committee member, the 32st IEEE International Conference on Computer Communications INFOCOM 2012 (INFOCOM'12).
- Technical Program Committee Co-Chair, the 2011 Workshop of Collaborative, Autonomic, and Resilient Defenses for Cyber Physical Systems (CyPhyCARD 2011), in conjunction with CollaborateCom 2011.
- Poster/Demo Chair, the 2011 ACM SIGMOBILE/ USENIX International Conference on Mobile Systems, Applications, and Services (MobiSys 2011).
- Technical Program Committee member, ACM SIGSPATIAL GIS 2011.
- Technical Program Committee member, IEEE ICC'12 WNS (ICC 2012 Wireless Networking Symposium).
- Technical Program Committee member, the 17th International Conference on Mobile Computing and Networking (MobiCom'11).
- Technical Program Committee member, the 31st IEEE International Conference on Computer Communications INFOCOM 2011 (INFOCOM'11).
- Technical Program Committee member, the 8th Annual IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON), 2011.
- Technical Program Committee member, IEEE ICC'11 WNS (ICC 2011 Wireless Networking Symposium).
- Technical Program Committee member, the third ACM SIGSPATIAL International Workshop on Location-Based Social Networks (LBSN 2011).
- Technical Program Committee member, WWW 2011 - Web for Emerging Regions.
- Technical Program Committee member, IEEE WCNC 2011 - Service & Application Track.
- Technical Program Committee member, IEEE Globecom 2011-Ad-hoc and Sensor Networking Symposium (Globecom'11-AHSN).
- Technical Program Committee member, The Fifth International Conference on COMMunication System softWARE and middlewaRE (COMSWARE 2011).

- Associate Vice Program Chair for Wireless Systems and Sensor Networks, the 2010 ACS/IEEE International Conference on Computer Systems and Applications (AICCSA-10).
- Session Chair, Globecom 2010.
- Session Chair, MobiCom 2010.
- Technical Program Committee member, the 16th International Conference on Mobile Computing and Networking (MobiCom'10).
- Technical Program Committee member, the 30th IEEE International Conference on Computer Communications INFOCOM 2010 (INFOCOM'10).
- Technical Program Committee member, ACM SIGSPATIAL GIS 2010.
- Session Chair, Infocom 2010.
- Technical Program Committee member, The Second International Conference on Emerging Network Intelligence (EMERGING 2010).
- Technical Program Committee member, the third International Telecommunication Union Conference, Kaleidoscope 2010.
- Program Co-Chair, The Second IEEE International Workshop on Intelligent Pervasive Devices (PerDev09), co-located with Percom 2009.
- Technical Program Committee member, IEEE Globecom 2010-Communication & Information System Security (Globecom'10-CIS).
- Student Research Competition Committee member, the 15th ACM Annual International Conference on Mobile Computing and Networking 2009 (MobiCom'09).
- Technical Program Committee member, the 29th IEEE International Conference on Computer Communications INFOCOM 2009 (INFOCOM'09).
- Technical Program Committee member, ACM SIGSPATIAL GIS 2009.
- Technical Program Committee member, IEEE ICC 2010 - Wireless and Mobile Networking Symposium (ICC'10-WNS).
- Technical Program Committee member, IEEE ICC 2010 - Ad-hoc, Sensor and Mesh Networking Symposium (ICC'10-AHS).
- Technical Program Committee member, IEEE Globecom 2010 - Ad Hoc and Sensor Networks Symposium (Globecom'10-ASNS).
- Technical Program Committee member, IEEE WCNC 2010 - Service & Application Track.
- Technical Program Committee member, Third International Conference on MOBILE Wireless MiddleWARE, Operating Systems, and Applications (MobilWare'10).
- Technical Program Committee member, IEEE Globecom 2009 - Ad Hoc Sensor and Mesh Networking Symposium (Globecom'09-AHSN).
- Technical Program Committee member, IEEE ICC 2009 - Ad-Hoc and Sensor Networking Symposium (ICC'09-AHSNET).
- Technical Program Committee member, IEEE ICC 2009 - Wireless Networking Symposium (ICC'09-WN).
- Technical Program Committee member, The 5th IEEE/IFIP International Conference on Embedded and Ubiquitous Computing (EUC'09) - Context-aware Mobile Computing Track.
- Technical Program Committee member, Second International Conference on MOBILE Wireless MiddleWARE, Operating Systems, and Applications (MobilWare 09).
- Technical Program Committee member, The IEEE Local Computer Networks Conference (LCN 2009).
- Technical Program Committee member, the 17th International Conference on Telecommunications - Ad-hoc and Sensor Communications Track.

- Technical Program Committee member, The 5th IEEE LCN Workshop on Security in Communication Networks (SICK) in conjunction with the IEEE Local Computer Networks Conference (LCN 2009).
- Technical Program Committee member, The First International Conference on Emerging Network Intelligence (EMERGING 2009).
- Program Co-Chair, The IEEE International Workshop on Mission Critical Networks (MCN 2008), co-located with Infocom 2008.
- Program Co-Chair, The First IEEE International Workshop on Power-Aware Pervasive Devices (PerDev2008), co-located with Percom 2008.
- Technical Program Committee member, the 28th IEEE International Conference on Computer Communications INFOCOM 2008 (INFOCOM'08).
- Technical Program Committee member, IEEE ICC 2008 - Wireless Networking Symposium (ICC'08-WN).
- Technical Program Committee member, IEEE Globecom 2008 - Ad Hoc Sensor and Mesh Networking Symposium (Globecom'08-AHSN).
- Technical Program Committee member, IFIP/TC6 Networking 2008 Conference.
- Technical Program Committee member, The IEEE Local Computer Networks Conference (LCN 2008).
- Technical Program Committee member, The 17th IEEE International Conference on Computer Communications and Networks (IC3N08).
- Technical Program Committee member, The 1st IEEE International Workshop on Sensor Networks (SN 2008), In Conjunction with IC3N.
- Technical Program Committee member, The 6th ACS/IEEE International Conference on Computer Systems and Applications (AICCSA-08 Networking and Multimedia Track).
- Technical Program Committee member, The 1st ACS/IEEE International Workshop on Wireless Internet Services (WISE 2008).
- Technical Program Committee member, The Third International Conference on Digital Telecommunications (ICDT 2008).
- Technical Program Committee member, First International Conference on MOBILE Wireless MiddleWARE, Operating Systems, and Applications (MobilWare 08).
- Session Chair, Infocom 2008.
- Student demo judge, The Thirteenth Annual International Conference on *Mobile Computing and Networking* (MobiCom 07).
- Technical Program Committee member, MM-CSC 2008 (Mosharaka Multi-Conference on Communications, Signals and Coding).
- Program Co-Chair, The IEEE First International Workshop on Research Challenges in Next Generation Networks for First Responders and Critical Infrastructures (NetCri 2007).
- Technical Program Committee member, IEEE Globecom 2007 - Ad Hoc and Sensor Networks Symposium (Globecom'07-ASNS).
- Technical Program Committee member, IEEE ICC 2007 - Wireless Adhoc and Sensor Networks Symposium (ICC'07-WAS).
- Technical Program Committee member, The IEEE Local Computer Networks conference (LCN 2007).
- Technical Program Committee member, The Seventh IEEE International Workshop on Wireless Local Networks (WLN 2007).

- Technical Program Committee member, the Second IEEE Workshop on Practical Issues in Building Sensor Network Applications (SenseApp 2007).
- Technical Program Committee member, The 2007 IEEE International Conference on Information Reuse and Integration (IEEE-IRI'07).
- Technical Program Committee member, The 3rd International Conference on Embedded Software and Systems (ICISS 2007).
- Technical Program Committee member, The 16th IEEE International Conference on Computer Communications and Networks (IC3N07).
- Technical Program Committee member, IFIP/TC6 Networking 2007 Conference.
- Technical Program Committee member, IEEE IPCCC 2007.
- Technical Program Committee member, IEEE ICDCS 2007 - Network Protocols Track.
- Technical Program Committee member, IEEE Globecom 2006 - Wireless Ad Hoc and Sensor Networks - towards Anytime Anywhere Internetworking (Globecom'06-WASNet).
- Technical Program Committee member, The 15th IEEE International Conference on Computer Communications and Networks (IC3N06).
- Technical Program Committee member, IEEE International Conference on Wireless Networks, Communications, and Mobile Computing (WirelessCom 2006), Symposium on Mobile Computing 2006.
- Technical Program Committee member, the First IEEE Workshop on Practical Issues in Building Sensor Network Applications (SenseApp 2006).
- Technical Program Committee member, International Conference on Digital Telecommunications (ICDT'06), August 30-31, 2006, Côte d'Azur, France.
- Technical Program Committee member, IEEE Advanced Information Networking and Applications (AINA2006), Mobile Networks and Applications track.
- Publicity Co-Chair, Second IEEE Workshop on Dependability and Security in Sensor Networks and Systems (DSSNS'2006).
- Technical Program Committee member for Networks and Communication Systems (NCS 2006).
- Session Chair, The Second Annual International Conference on Mobile and Ubiquitous Systems: Networking and Services (Mobiquitous 2005) July 17-21, 2005, San Diego, California.
- Technical Program Committee member, IEEE International Conference on Computer Communications and Networks (IC3N) 2005.
- Technical Program Committee member, IEEE International Conference on Wireless Networks, Communications, and Mobile Computing (WirelessCom 2005), Symposium on Mobile Computing 2005.
- Technical Program Committee member, IEEE International Symposium on Personal Indoor and Mobile Radio Communications (PIMRC) 2005.
- Technical Program Committee member, The Ninth IASTED International Conference on Internet, Multimedia Systems and Applications (IMSA 2005).
- Publicity Chair, Wireless Networks, Communications and Mobile Computing Conference, Symposium on Mobile Computing (WirelessCom) 2005.
- Technical Program Committee member, Workshop on Internet Compatible QoS in Ad hoc Wireless Networks (IC-QAWN) 2005.

- Reviewer, IEEE/ACM Transactions on Networking, IEEE Transactions on Computers, IEEE Transactions on Mobile Computing, IEEE Transactions on Wireless Communications, IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Vehicular Technology, IEEE Transactions on Signal Processing, ACM Transactions on Embedded Computing Systems, Proceedings of the IEEE, IEEE Journal on Selected Areas of Communication, ACM Mobile Computing and Communications Review, Wireless Networks, Elsevier Journal of Computer Networks, IEEE Pervasive Computing, Elsevier Journal of Ad Hoc Networks, IEEE Wireless Communications Magazine, IEEE Communications Letters, Elsevier Journal of Network and Computer Applications, Elsevier Computer Communications, Mobile Networks and Applications journal, EURASIP Journal on Wireless Communications and Networking, Journal of Computing, International Journal of Security and Networks, Journal of Computer and System Sciences, IEEE ICNP, ACM/Usenix MobiSys, IEEE PerCom, IEEE Globecom, IEEE VTC, ACM WiSe, IEEE ICC, IEEE WCNC, IEEE RIDE, ACM/IEEE MSWiM 2005, SensorFusion Workshop, IEEE PIMRC, IEEE IWCMC, IEEE IPSN, IASTED International Conference on Communication Systems.
- Senior Member: IEEE
- Member: ACM, IEEE Computer Society, IEEE Communication Society, ACM SigMobile, International Society on Modelling and Simulation, The International Association of Science and Technology for Development (IASTD) Technical Committee, and Egyptians Syndicate Professional Engineers society.
- Elected member, Phi Kappa Phi.
- Life member: General Egyptian Society For Talented.

CITIZENSHIP

US Permanent Resident- Egyptian.