

# DUC A. TRAN, Ph. D.

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## RESIDENCY STATUS

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US Citizen

## RESEARCH INTERESTS

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Networking and Distributed Systems, with special focus on data management, search, and networking issues in decentralized systems, especially when deployed in P2P/overlay networks, wireless and sensor networks, disruption-tolerant networks, and multimedia networks.

## EDUCATION

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- PhD in Computer Science**    School of Electrical Engineering and Computer Science,  
(9/1998 – 5/2003)    **University of Central Florida** (Orlando, FL)
- GPA: 4.0/4.0
  - Dissertation: Overlay Multicast Solutions to Media Streaming
  - Advisor: Professor K. A. Hua (IEEE Fellow)
- BS in Computer Science**    Faculty of Mathematics, Mechanics, and Informatics, **Vietnam**  
(9/1992 – 7/1996)    **National University**
- Graduated with Distinction

## WORK HISTORY

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- Assistant Professor**    Department of Computer Science, **University of**  
(9/2007 – present)    **Massachusetts at Boston** (Boston, MA)
- Director, Network Information Systems Lab (NISLab)
- Assistant Professor**    Department of Computer Science, **University of Dayton**  
(8/2003 – 8/2007)    (Dayton, OH)
- Research Assistant**    School of Electrical Engineering and Computer Science,  
(8/1998 – 5/2003)    **University of Central Florida** (Orlando, FL)
- Member of the Data Systems Research Lab
- Instructor**    School of Electrical Engineering and Computer Science,  
(8/2000 – 5/2001)    **University of Central Florida** (Orlando, FL)
- Visiting Scholar**    **Okinawa International Center** (Japan)

(10/1997 – 4/1998)

**Lecturer**  
(9/1996 – 8/1998)

Faculty of Information Technology, **Vietnam National University**

## TEACHING EXPERIENCE

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### UMass Boston (9/2007 – present)

- CS446/646 Computer Communications Networks (Fall 07, Fall 08, Fall 09, Fall 10, Fall 11), CS310 Applied Discrete Mathematics (Summer 11), CS697 ST: Sensor Networks (Spring 10), CS648 Wireless Networking and Mobile Computing (Spring 08, Spring 10), CS647 Multimedia Networking (Spring 09), CS460 Computer Graphics (Spring 09, Spring 11), CS210/IT210 Intermediate Computing and Algorithms (Summer 10)

### University of Dayton (8/2003 – 5/2007)

- CPS470/570 Data Communications, CPS472/572 Computer Networks, CPS499/592 Special Topics in P2P Systems, CPS499/592 Special Topics in Distributed Information Retrieval, CPS499/592 Special Topics in Multimedia Systems, CPS350 Data Structures and Algorithms, CPS460/560 Computer Graphics, CPS437 Computer Systems and Architectures

### University of Central Florida (8/2000 – 5/2001)

- CGS 685 Computer Networks Concepts

### Vietnam National University (9/1996 – 8/1998)

- Introductory Courses in Programming

## REFEREED PUBLICATIONS

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*All publications below, except one invited paper, were refereed. Those marked with '\*' were joint work with students.*

### Books

1. **Duc A. Tran**. *Data Storage for Social Networks* (Springer Publisher, contracted and in preparation, expected publication in 2012)

### Book Chapters

2. K. Nguyen\* and **Duc A. Tran**. *Fitness-Based Generative Models for Power-Law Networks*. In Book "Handbook of Optimization in Complex Networks" (Editors: M. Thai and P. Pardalos, Springer Publisher, ISBN 1461407532, October 2011)
3. C. Pham\* and **Duc A. Tran**. *Publish/Subscribe Techniques in P2P Networks*. In Book "Advancements in Distributed Computing and Internet Technologies: Trends and Issues" (Editors: A. K. Pathan, M. Pathan, and H. Y. Lee, Information Science Reference, 1613501102, August 2011)

4. **Duc A. Tran** and L. H. Truong. *Enabling Publish/Subscribe Services in Sensor Networks*. Chapter 36, in Book "Advances in Next Generation Services and Service Architectures" (Editors: A. R. Prasad, J. Buford, and V. Gurbany, River Publishers, ISBN-10: 8792329551, April 2011)
5. **Duc A. Tran**, X. Nguyen, and T. Nguyen. *Machine Learning Based Localization*. Chapter XII, pages 302-320, in Book "Localization Algorithms and Strategies for Wireless Sensor Networks" (Editors: G. Mao and B. Fidan, Information Science Reference, ISBN: 978-1-60566-396-8, May 2009)
6. **Duc A. Tran** and T. Nguyen. *Broadcasting Techniques for Video on Demand in Wireless Networks*. Chapter 24, pages 675-692, in Book "Handbook of Mobile Broadcasting" (Editors: B. Furht and S. A. Ahson, CRC Press, ISBN 1420053868, April 2008)

## Journal Editorials

7. **Duc A. Tran**. *Guest Editorial*, Special Issue on Grid and P2P Systems, Journal of Parallel, Emergent, and Distributed Systems, Taylor & Francis Group, 26(2): 83, April 2011
8. **Duc A. Tran**, Deborah Agarwal, and Mark Yarvis. *Guest Editorial*, Special Issue on Group Communication in Ad hoc Networks, Journal on Pervasive Computing and Communications, 5(4), 2009 (Emerald Publishing)

## Journal Articles

9. **Duc A. Tran**. *Video-On-Demand Broadcasting to Mobile Wireless Users*. IEEE Computer Society Multimedia Communications E-Letter, IEEE, 6(2): 17-19, February 2011
10. **Duc A. Tran** and C. Pham\*. *A Content-Guided Publish/Subscribe Mechanism for Sensor Networks without Location Information*. Journal on Computer Communications (COMCOM), Elsevier, 33(13): 1515-1523, August 2010 (Impact Factor: 1.012)
11. **Duc A. Tran** and C. Pham\*. *Enabling Content-Based Publish/Subscribe Services in Cooperative P2P Networks*. Journal on Computer Networks (COMNET), Elsevier, 54(11): 1739-1749, August 2010 (Impact Factor: 1.610)
12. S. Ghadge\*, T. Killingback, B. Sundaram, and **Duc A. Tran**. *A Statistical Construction of Power-Law Networks*. International Journal of Parallel, Emergent, and Distributed Systems, Taylor & Francis Group, 25(3): 223-235, 2010
13. **Duc A. Tran** and T. Nguyen. *Localization in Wireless Sensor Networks based on Support Vector Machines*. IEEE Transactions on Parallel and Distributed Systems (TPDS), 19(7): 981-994, July 2008 (Impact Factor: 1.733)
14. T. Nguyen, K. Kolazhi, R. Kamath, S. Cheung, and **Duc A. Tran**. *Efficient Multimedia Distribution in Source Constraint Networks*. IEEE Transactions on Multimedia, 10(3): 523-537, April 2008 (Impact Factor: 2.288)
15. **Duc A. Tran** and T. Nguyen. *Hierarchical Multidimensional Search in P2P Networks*. Journal of Computer Communications (COMCOM), Elsevier 31(2): 346-357, Feb 2008 (Impact Factor: 1.012)
16. T. Nguyen, D. Nguyen, H. Liu, and **Duc A. Tran**. *Stochastic Binary Sensor Networks for Noisy Environments*. International Journal of Sensor Networks, 2(5/6): 414-427. Inderscience Publisher, 2007
17. **Duc A. Tran** and Harish Raghavendra\*. *Congestion Adaptive Routing in Mobile Ad hoc Networks*. IEEE Transactions on Parallel and Distributed Systems (TPDS), 17(10): 1294 - 1305, October 2006 (Impact Factor: 1.733)

18. K. A. Hua and **Duc A. Tran**. *Range Multicast for Video on Demand*. Journal of Multimedia Tools and Application. Vol. 27, No. 3, pages 367-391, December 2005. Springer Publishers (Impact Factor: 0.626)
19. **Duc A. Tran**, K. A. Hua, and T. T. Do. *A Peer-to-Peer Architecture for Media Streaming*. IEEE Journal of Selected Areas in Communications (JSAC), 22(1): 121-133, January 2004 (Impact Factor: 3.758)
20. **Duc A. Tran**, K. A. Hua, and K. Vu. *An Object-based Video Data Model for Multimedia Systems*. Special issue on Distributed Multimedia Systems with Applications, Journal of Applied Systems Studies. Cambridge International Science Publishing, 2(3), 2001.
21. K. Vu, K. A. Hua, and **Duc A. Tran**. *Handling Free-Shaped Queries in Large Image Databases using a Sampling-Based Image Retrieval Technique*. Journal of Applied Systems Studies. Cambridge International Science Publishing, 2(2), 2001.
22. Roy Villafane, Kien A. Hua, **Duc Tran**, and Basab Maulik. *Knowledge Discovery from Series of Interval Events*. Journal of Intelligent Information Systems. Springer, 15: 71-89, 2000 (Impact Factor: 0.98)

### Conference Proceedings

23. A. Dusenbery\*, **Duc A. Tran**, and K. Nguyen\*. *Analysis of An Investment Social Network*. To Appear In Proceedings of IEEE Conference on Communications (IEEE ICC 2012), Ottawa, Canada, June 10-15, 2012 (acceptance rate: 37% out of 2819 submissions)
24. C. Pham\* and **Duc A. Tran**. *A Search-Efficient Architecture for Data-Centric Sensor Networks*. In Proceedings of IEEE Global Communications Conference (IEEE Globecom 2011), Houston, USA, December 5-9, 2011 (acceptance rate: 36% out of 2923 submissions)
25. C. Pham\*, F. Zhang, and **Duc A. Tran**. *Maintenance-Efficient Erasure Coding for Distributed Archival Systems*. To Appear In Proceedings of Workshop on Grid and P2P Systems and Applications (GridPeer 2011 – in conjunction with ICCCN 2011), Maui, Hawaii, USA, August 1-4, 2011
26. K. Nguyen\*, C. Pham\*, and **Duc A. Tran**, and F. Zhang. *Preserving Social Locality in Data Replication for Social Networks*. In Proceedings of IEEE Workshop on Simplifying Complex Networks for Practitioners (SIMPLEX 2011 – in conjunction with IEEE ICDCS 2011), Minneapolis, MN, USA, June 24, 2011
27. K. Nguyen\* and **Duc A. Tran**. *An Analysis of Facebook Activities*. In Proceedings of IEEE Consumer Communications and Networking Conference (CCNC 2011), Las Vegas, NV, January 9-12, 2011 (acceptance rate: 33% out of 300 submissions)
28. K. Nguyen\* and **Duc A. Tran**. *On Generating Power-Law Networks with Assortative Mixing*. In Proceedings of the 3<sup>rd</sup> IEEE Conference on Communications and Electronics (ICCE 2010), August 11-13, 2010
29. C. Pham\* and **Duc A. Tran**. *CRES: A Content-based Routing Substrate for Large-Scale Data-Centric Sensor Networks*. In Proceedings of IEEE Conference on Sensor, Mesh, and Ad hoc Communications and Networks (SECON 2010), Extended Abstract, Boston, MA, USA, June 21-25, 2010
30. **Duc A. Tran** and T. Nguyen. *Hop-Count based Techniques for Passive Target Localization in Sensor Networks*. In Proceedings of 18th IEEE Conference on Computer Communications and Networks (ICCCN 2009), San Francisco, CA, USA, August 2-6, 2009 (acceptance rate: 29% out of 387 submissions)
31. S. Ghadge\*, T. Killingback, B. Sundaram, and **Duc A. Tran**. *A Parsimonious Statistical Protocol for Generating Power-Law Networks*. In Proceedings of Workshop on Grid and P2P Systems and Applications (GridPeer2009 - in conjunction with ICCCN 2009), San Francisco, CA, USA, August 2-6, 2009

32. **Duc A. Tran** and C. Pham\*. *PUB-2-SUB: A Content-based Publish/Subscribe Framework for Cooperative P2P Networks*. In Proceedings of IFIP Conference on Networking (IFIP NETWORKING 2009), Work-in-Progress, Aachen, Germany, May 2009 (acceptance rate: 21% full paper, 33% wip, out of 249 submissions)
33. **Duc A. Tran** and C. Pham\*. *Cost-Effective Multidimensional Publish/Subscribe Services in Sensor Networks*. In Proceedings of IEEE Workshop on Localized Communication and Topology Protocols for Ad hoc Networks (LOCAN 2008 - in conjunction with IEEE MASS 2008), Atlanta, GA, USA, September 2008
34. **Duc A. Tran** and T. Nguyen. *Publish/Subscribe Service in CAN-based P2P Networks: Dimension Mismatch and the Random Projection Approach*. In Proceedings of IEEE Conference on Computer Communications and Networks (ICCCN 2008), US Virgin Island, August 3-7, 2008 (acceptance rate: 25% of 399 submissions, BEST PAPER AWARD)
35. T. Tran, T. Nguyen, and **Duc A. Tran**. *Joint Networking Coding and Power Control for Cellular Radio Networks*. In Proceedings of IEEE Int'l Conference on Communications and Electronics (ICCE 2008), June 2008.
36. **Duc A. Tran** and K. Nguyen\*. *Multidimensional Information Retrieval in P2P Networks*. In Proceedings of NSF Workshop on Next Generation Software - IEEE International Parallel and Distributed Processing Symposium – IPDPS 2008, Miami, Florida, USA, April 13-14, 2008
37. **Duc A. Tran**, S. R. Pamidimukkala\*, and P. Nguyen\*. *Relevance-Feedback Image Retrieval based on Multiple-Instance Learning*. In Proceedings of ACIS/IEEE Conference on Computer and Information Science (ICIS 2008), Portland, Oregon, USA, May 14-16, 2008 (acceptance rate: 33% of 320 submissions)
38. **Duc A. Tran** and K. Vu. *Dimensionality Reduction in Hyperbolic Data Spaces: Bounding the Reconstructed Information Loss*. In Proceedings of ACIS/IEEE Conference on Computer and Information Science (ICIS 2008), Portland, Oregon, USA, May 14-16, 2008 (acceptance rate: 33% of 320 submissions)
39. **Duc A. Tran** and T. Nguyen. *A Random Projection Approach to Subscription Covering Detection in Publish/Subscribe Systems*. In Proceedings of IEEE Int'l Conference on Collaborative Computing (CollaborateCom 2007), New York city, NY, USA, November 12-15, 2007.
40. **Duc A. Tran** and T. Nguyen. *Support Vector Classification Strategies for Localization in Sensor Networks*. In Proceedings of IEEE Int'l Conference on Communications and Electronics (ICCE 2006), October 10-11, 2006.
41. T. Nguyen, D. Nguyen, and **Duc A. Tran**. *Stochastic Binary Sensor Networks for Noisy Environments*. In Proceedings of IEEE Int'l Conference on Communications and Electronics (ICCE 2006), October 10-11, 2006.
42. T. Nguyen, **Duc A. Tran**, and Sen-Ching Cheung. *Efficient P2P Data Dissemination in a Homogeneous Capacity Network using Structured Mesh*. In Proceedings of IEEE/ICST Conference on Multimedia Services Access Networks (MSAN 2005), June 12-15, Orlando, FL, USA (INVITED PAPER)
43. **Duc A. Tran**. *Hierarchical Overlay Approach to Peer-to-Peer Similarity Search*. In Proceedings of USENIX Annual Technical Conference (USENIX 2005), Anaheim, CA, USA, April 10-15, 2005.
44. **Duc A. Tran** and Harish Raghavendra\*. *Routing with Congestion Awareness and Adaptivity in Mobile Ad hoc Networks*. In Proceedings of IEEE Wireless Communications and Networking Conference (WCNC 2005), New Orleans, LA, USA, March 13-17, 2005
45. Harish Raghavendra\* and **Duc A. Tran**. *Congestion Adaptive Routing in Ad hoc Networks*. ACM MOBICOM 2004 (poster), Philadelphia, PA, USA, September 26 – October 1, 2004.
46. **Duc A. Tran**, Minh Le, and Kien A. Hua. *MobiVoD: A Video-on-Demand System Design for Mobile Ad hoc Networks*. In Proceedings of IEEE International Conference on Mobile Data

- Management (MDM 2004), pages 212-223, Berkeley, CA, USA, January 18-22, 2004 (acceptance rate: 25%)
47. **Duc A. Tran**, Kien A. Hua, and Tai T. Do. *ZIGZAG: An Efficient Peer-to-Peer Scheme for Media Streaming*. In Proceedings of IEEE INFOCOM 2003, San Francisco, CA, USA, March 30-April 3, 2003 (acceptance rate: 20% of 1078 submissions)
  48. Kien A. Hua, **Duc A. Tran**, and Roy Villafane. *Overlay Multicast for Video on Demand on the Internet*. In Proceedings of ACM SIGAPP Symposium on Applied Computing (SAC 2003), Melbourne, FL, USA, March 9-12, 2003 (acceptance rate: 37% of 527 submissions)
  49. **Duc A. Tran**, Kien A. Hua and Simon Sheu. *A New Caching Architecture for Efficient Video Services on the Internet*. In Proceedings of IEEE Symposium on Applications and the Internet (SAINT 2003), pages 172-181, Orlando, FL, USA, January 27-31, 2003 (acceptance rate: 28% of 149 submissions)
  50. Kien A. Hua, Ning Jiang, Roy Villafane, and **Duc A. Tran**. *Admire: An Algebraic Approach to System Performance Analyses Using Data Mining Techniques*. In Proceedings of ACM SIGAPP Symposium on Applied Computing (SAC 2003), Melbourne, FL, USA, March 9-12, 2003 (acceptance rate: 37% of 527 submissions)
  51. **Duc A. Tran**, Kien A. Hua, and Tai T. Do. *Scalable Media Streaming in Large P2P Networks*. In Proceedings of ACM Multimedia Conference (SIGMM 2002), pages 247-250 (short paper), Juan Les Pins, France, December 1-6, 2002 (acceptance rate: 25% for short papers)
  52. **Duc A. Tran**, Kien A. Hua, and Tai T. Do. *Layered Range Multicast for Video on Demand*. In Proceedings of IEEE International Conference on Computer Communications and Networks (ICCCN 2002), pages 210-215, Miami, FL, USA, October 14-16, 2002 (acceptance rate: 26% of 300 submissions)
  53. **Duc A. Tran**, Kien A. Hua, and Mounir Tantaoui. *A Multi-Multicast Sharing Technique for Large-Scale Video Information Systems*. In Proceedings of IEEE International Conference on Communications (ICC 2002), New York city, NY, USA, April-May 2002 (acceptance rate: 40% of 1880 submissions)
  54. **Duc A. Tran**, Kien A. Hua and Kiran Prabhakara. *On The Efficient Use of Multiple Physical-Channel Air-Cache*. In Proceedings of IEEE Wireless Communications and Networking Conference (WCNC 2002), Orlando, FL, USA, March 17-21, 2002 (acceptance rate: 29%)
  55. **Duc A. Tran**, Kien A. Hua and Ning Jiang. *A Generalized Design for Efficiently Broadcasting on Multiple Physical Channel Air-Cache*. In Proceedings of ACM SIGAPP Symposium on Applied Computing (SAC 2001), pages 387-392, Las Vegas, USA, March 11-14, 2001
  56. Khanh Vu, Kien A. Hua and **Duc A. Tran**. *An Efficient Core-Area Detection Algorithm for Fast Noise-Free Image Query Processing*. In Proceedings of ACM SIGAPP Symposium on Applied Computing (SAC 2001), pages 258-263, Las Vegas, USA, March 11-14, 2001
  57. Kien A. Hua, **Duc A. Tran**, and Roy Villafane. *Caching Multicast Protocol for On-Demand Video Delivery*. In Proceedings of ACM/SPIE Conference on Multimedia Computing and Networking (MMCN 2000), pages 2-13, San Jose, CA, USA, January 23-25, 2000
  58. **Duc A. Tran**, Kien A. Hua, and Khanh Vu. *Semantic Reasoning based Video Database Systems*. In Proceedings of International Conference on Database and Expert Systems Applications (DEXA 2000), pages 41-50, London, UK, September 4-8, 2000
  59. **Duc A. Tran**, Kien A. Hua, and Khanh Vu. *VideoGraph: A Graphical Object-based Model for Representing and Querying Video Data*. In Proceedings of International Conference on Conceptual Modeling (ER 2000), pages 383-396, Salt Lake city, UT, USA, October 9-12, 2000 (acceptance rate: 25%)
  60. Roy Villafane, Kien A. Hua, **Duc A. Tran**, and Basab Maulik. *Mining Interval Time Series*. In Proceedings of International Conference on Data Warehousing and Knowledge Discovery (DAWAK 1999), pages 318-330, Florence, Italy, August-September 1999. (BEST PAPER)

## **PROFESSIONAL ACTIVITIES**

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### **Grant Proposals Reviewer/Panelist**

- External Reviewer, Qatar National Research Fund, 2011
- NSF Review Panelist, Graduate Research Fellowship Program (GRFP), Feb 2011
- NSF Review Panelist, Cyber Physical Systems (CPS) program (invited by CNS), Arlington, VA, May 2010
- NSF Review Panelist, Cyber Physical Systems (CPS) program (invited by ENG), Arlington, VA, June 2009
- NSF Review Panelist, Cyber Physical Systems (CPS) program (invited by CNS), Arlington, VA, May 2009
- NSF Review Panelist, Computing Research Infrastructure (CRI) program (invited by CNS), Arlington, VA, August 2008

### **Journal Editor**

- Editor, Int'l Journal on Parallel, Emergent, and Distributed Systems (2010 – date)
- Editor, ISRN Communications Journal (2010 – date)
- Guest-Editor with Deb Agarwal (Lawrence Berkeley Lab) and Mark Yarvis (Intel Research), Journal on Pervasive Computing and Communications, Special Issue on Group Communications in Ad hoc Networks, Volume 5, Issue 4, 2009

### **Technical Program Committee**

#### **PC Chair**

- PC Co-Chair, IEEE Workshop on Complex and Communication Networks (CCNet 2011), December 1-5, 2011, Houston, Texas (in conjunction with IEEE GLOBECOM 2011)
- PC Co-Chair, Workshop on Grid and P2P Systems and Applications (GridPeer 2011), August, 2011, Maui, Hawaii (in conjunction with ICCCN 2011)
- PC Co-Chair, IEEE Workshop on Complex and Communication Networks (CCNet 2010), December 6-10, 2010, Miami, Florida (in conjunction with IEEE GLOBECOM 2010)
- PC Co-Chair, Workshop on Grid and P2P Systems and Applications (GridPeer 2010), August 4-6, 2010, Zurich, Switzerland (in conjunction with ICCCN 2010)
- PC Co-Chair, Workshop on Grid and P2P Systems and Applications (GridPeer 2009), August 4-6, 2009, San Francisco, CA (in conjunction with ICCCN 2009)
- PC Co-Chair, IEEE Workshop on Information Retrieval in Sensor Networks (IRSN 2009), January 13, 2009, Las Vegas, NV (in conjunction with CCNC 2009)

#### **PC Vice-Chair**

- IEEE International Conference on Advanced Information and Networking Applications (AINA 2007)

#### **PC Member**

- 2012
  - PC Member, IEEE Globecom 2012
  - PC Member, 8th International Wireless Communications and Mobile Computing Conference (IWCMC 2012)

- PC Member, International Conference on Knowledge and Systems Engineering (KSE 2012)
- 2011
  - PC Member, 14<sup>th</sup> IEEE Conference on Computational Science and Engineering (CSE 2011)
  - PC Member, ICDCS 2011 Workshop on Simplifying Complex Networks for Practitioners (SIMPLEX 2010)
  - PC Member, INFOCOM 2011 Workshop on Cognitive and Cooperative Networks
  - PC Member, 20<sup>th</sup> International Conference on Computer Communications and Networks (ICCCN 2011)
  - PC Member, IEEE International Conference on Consumer Networking and Communications (CCNC 2011, Wireless Consumer Communication and Networking Track)
  - PC Member, ACM Symposium on Applied Computing (SAC 2011, Multimedia and Visualization Track)
  - PC Member, International Workshop on Sensor Networks (in conjunction with IEEE ICDCS 2011)
  - PC Member, International Conference on Knowledge and Systems Engineering (KSE 2011)
- 2010
  - PC Member, 5<sup>th</sup> International ICST Conference on Bio-Inspired Models of Network, Information, and Computing Systems (BIONETICS 2010)
  - PC Member, 19<sup>th</sup> International Conference on Computer Communications and Networks (ICCCN 2010)
  - PC Member, IEEE Globecom 2010 (Symposium on Wireless Networking)
  - PC Member, ACM Symposium on Applied Computing (SAC 2010, Multimedia and Visualization Track)
  - PC Member, IEEE Wireless Communications and Networking Conference (WCNC 2010)
  - PC Member, IEEE International Conference on Consumer Networking and Communications (CCNC 2010, Wireless Home Communication and Networking Track)
  - PC Member, International Workshop on Sensor Networks (in conjunction with IEEE ICDCS 2010)
  - PC Member, IEEE International Workshop on Intelligent Pervasive Devices (PerDev 2010, in conjunction with IEEE PerCom 2010)
  - PC Member, IEEE International Workshop on Pervasive Wireless Networking (PWN 2010, in conjunction with IEEE PerCom 2010)
- 2009
  - PC Member, Workshop on Social Networks, Systems, and Applications (SNSA 2009, in conjunction with WASA 2009)
  - PC Member, ACM Intl Workshop on Automated and Autonomous Sensor Networks (AASN 2009)
  - PC Member, Third IEEE International Workshop on Heterogeneous Wireless Networks - Resource Management and QoS (HWN-RMQ 2009, in conjunction with WiMob 2009)
  - PC Member, International Conference on Knowledge and Systems Engineering (KSE 2009)
  - PC Member, International Workshop on Sensor Networks (in conjunction with ICCCN 2009)

- PC Member, International Workshop on Security, Privacy and Trust of Computer and Cyber-Physical Networks (SecureCPN 2009, in conjunction with ICCCN 2009)
- PC Member, International Workshop on Sensor Network Technologies for Information Explosion Era (SeNTIE 2009, in conjunction with MDM 2009)
- PC Member, IEEE International Workshop on Intelligent Pervasive Devices (PerDev 2009, in conjunction with IEEE PerCom 2009)
- PC Member, IEEE International Conference on Consumer Networking and Communications (CCNC 2009, Wireless Networking Track)
- PC Member, ACM Symposium on Applied Computing (SAC 2009, Multimedia and Visualization Track)
- 2008
  - PC Member, IEEE International Conference on Consumer Networking and Communications (CCNC 2008, Wireless Routing and Transport Track, Network Access and Communications Track)
  - PC Member, ACM Symposium on Applied Computing (SAC 2008, Multimedia and Visualization Track)
  - PC Member, International Conference on Communications and Networking in China (CHINACOM 2008, Wireless Communications and Networking program)
  - PC Member, International Workshop on Sensor Network Technologies for Information Explosion Era (SeNTIE 2008, in conjunction with MDM 2008)
  - PC Member, International Workshop on Sensor Networks (in conjunction with ICCCN 2008)
- 2007
  - PC Member, IEEE International Conference on Consumer Networking and Communications (CCNC 2007)
  - PC Member, Pacific-Rim Conference on Multimedia (PCM 2007, Multimedia Communication and Networking Track)
  - PC Member, IEEE Globecom 2007 (Symposium on Communications Software and Services, Symposium on Ad hoc and Sensor Networking)
  - PC Member, IEEE Workshop on Data Intensive Sensor Networks (in conjunction with MDM 2007)
- 2006
  - PC Member, IEEE International Conference on Communications (ICC 2006, Wireless Ad hoc and Sensor Networks symposium)
  - PC Member, IEEE International Conference on Communications and Electronics (ICCE 2006)
  - PC Member, IEEE International Workshop on Heterogeneous Wireless Networks: Resource Management and QoS (HWN-RMQ, in conjunction with IEEE CCNC 2006)
- 2005
  - PC Member, ACM Symposium on Applied Computing (SAC 2005, Multimedia and Visualization Track)
  - PC Member, IEEE International Workshop on Adaptive Wireless Networks (in conjunction with IEEE GLOBECOM 2005)
  - PC Member, IEEE International Conference on Multimedia Service Access Networks (MSAN 2005)
- 2004
  - PC Member, International Conference on Wireless Networks (ICWN 2004)

- PC Member, International Conference on Web-Age Information Management (WAIM 2004)

### **Session Chair**

- Multicasting and Broadcasting session, Int'l Conference on Wireless Algorithms, Systems, and Applications (WASA 2009)
- Internet P2P Technologies session, IEEE Int'l Conference on Computer Communications and Networks (ICCCN 2008)
- Multimedia Content Distribution Networks session, IEEE Globecom 2007
- Video on Demand and Indexing session, ACM Symposium on Applied Computing (SAC 2003)
- Special Session on Distributed Multimedia Streaming, IEEE Conference on Consumer Networking and Communications (CCNC 2006), co-organizing with T. Nguyen (Oregon State) and Pascal Frossard (EPFL)

### **IEEE Technical Committees**

- Member, IEEE Technical Committee on Data Engineering (TCDE, 2008-present)
- Member, IEEE Technical Committee on Computer Communications (TCCC, 2008-present)
- Member, IEEE Technical Committee on Distributed Processing (TCDP, 2008-present)
- Member, IEEE Technical Committee on Autonomous and Autonomic Systems (TCAAS, 2008-present)

### **Invited Speaker**

- Colloquium talk, "Information Brokerage in Sensor Networks", Department of Computer and Information Science, University of Massachusetts Dartmouth (11/19/2010)
- Colloquium talk, "Information Brokerage in Sensor Networks", IBM Research Lab, Zurich, Switzerland (8/4/2010)
- Colloquium talk, "PUB-2-SUB: A Content-based Publish/Subscribe Framework for Cooperative P2P Networks", Department of Computer Science, University of Massachusetts Lowell (2/6/2009)
- Colloquium talk, "Research Problems in Distributed/Multimedia/Sensor Networks", College of Science and Mathematics, University of Massachusetts Boston (10/4/2007)

### **Manuscript Referee**

#### **Journals**

- Oxford Computer Journal (2011)
- IEEE Transactions on Computer (2011)
- ACM Multimedia Systems Journal
- IEEE Transactions on Multimedia, IEEE Transactions on Broadcasting, IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Multimedia, IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Vehicular Technologies (2011), IEEE Network Magazine, Transactions on Systems, Man, and Cybernetics (2011)
- IET Communications
- Elsevier Journal of Computer Communications (2011), Elsevier Journal of Data and Knowledge Engineering, Elsevier Journal of Network and Computer Applications, Elsevier Journal on Parallel and Distributed Computing (2005, 2009, 2010, 2011)
- Journal of Pervasive Computing and Communications

- Springer's Journal of Multimedia Tools and Applications (2011), Springer's Journal on P2P Networking and Applications (2011)
- Journal of Computer Systems Science and Engineering
- EURASIP Journal on Applied Signal Processing
- Artificial Intelligence Review

#### **Conferences**

- IEEE P2P 2010, IEEE AINA (2007, 2008), IEEE CCNC (2006, 2007, 2008), IEEE ICCE 2006, IEEE GLOBECOM (2005, 2007), IEEE ICC (2004, 2006), IEEE WCNC (2005, 2006), ACM SAC (2001, 2003, 2005, 2008), ACM SIGMM 2002, PCM 2007, MDM (2007, 2008), ICWN 2004, WAIM 2004, MSAN 2005, CHINACOM 2008

#### **External Referee**

- The University of Missouri Research Board Grant (2004)

#### **Membership**

- Senior Member, ACM
- Professional Member, IEEE Computer Society

## **UNIVERSITY SERVICE**

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### **UMass Boston**

- Member, Dept. of Computer Science Personnel Committee (Fall 2008-present)
- Member, Dept. of Computer Science Faculty Search Committee (2007-2008, 2008-2009, 2009-2010)
- Member, Dept. of Computer Science Web Committee (Spring 2010-present)
- Member, Dept. of Computer Science Budget Administrator Search Committee (Spring 2009)
- Member, Dept. of Computer Science Student Recruitment Committee (Fall 2007-present)
- Faculty Advisor, UMass Boston's ACM Student Club (Fall 2007-Spring 2009)
- Coach, UMass Boston Programming Team at ACM Programming Contest Boston Region (2008, 2009, 2010)
- Program Committee Member, Computer Science Doctoral Research Symposium (Spring 2008, Spring 2009)

### **University of Dayton**

- Member, College of Arts and Sciences Graduate Committee (Fall 2005 - Winter 2006)
  - Member, Dept. of Computer Science Graduate Committee (Fall 2005 – Spring 2007)
  - Member, Computer Engineering Program Committee (Fall 2005 – Spring 2006)
  - Member, University Graduate Student Fellowship Review Committee (2006)
  - Member, Dept. of Computer Science Faculty Search Committee (2004-2005, 2003-2004)
  - Member, Dept. of Computer Science Web Development Committee (2003-2004)
  - Member, University Electronic Copyright Sub-Committee (Fall 2004)
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## RESEARCH PROPOSALS/GRANTS

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### External Funding

- Awards
  - PI, NSF, *NeTS:Small: Target Monitoring with Low-Cost Sensor Networks* (CNS-1116430, co-PI: B. Benson, 383,887USD, 9/1/2011-8/31/2014)
  - PI, Enterasys Network, *University Grant: Equipment for Networking Research and Education* (40,000USD value, other PIs: B. Campbell, R. Cheung, April 2011)
  - Sole PI, NSF, *CSR-PDOS: A Scalable and Self-Organizing System Architecture for Fast and Efficient Information Retrieval in Large-Scale Decentralized Networks* (CNS-0615055/0753066, 224,983USD, 9/1/2006 – 8/31/2009)
  - PI, NSF, *REU Supplemental Grant* (CNS-0826875, 6000USD, summer 2008)
  - NSF, *A Scalable Multicast Protocol to Enable Future-Generation Large-Scale Multimedia Applications* (NSF, ANI-0088026, PI: K. A. Hua, 300,000USD, 2001 – 2004). I helped my advisor write this NSF proposal which was initiated from my research. My doctoral study was partially funded by this award.
- Other proposals
  - Co-PI, NSF, *CPS:Medium: Collaborative Research: SeaNIC - Surveillance Network for Isla Contoy* (NSFP: B. Benson, 965,979USD, 01/09/2012-06/01/2015, not funded)
  - Sole PI, NSF, *CAREER: Information Brokerage in Large-Scale Sensor Networks* (sole PI, 426,182USD, 3/1/2011-2/28/2016, not funded)
  - Co-PI, NSF, *BPC: Broadening Participation in Computing Demonstration Project: Computing Undergraduate Scholars Program* (PI: P. Fejer, 169,316USD, not funded)
  - Co-PI, Department of Education, *Graduate Assistance in Areas of National Need Program (GAANN) at UMass Boston Department of Computer Science* (PI: P. Fejer, 214,796USD, 2010-2013, not funded)
  - Sole PI, NSF, *CAREER: A Content-based Networking Approach to Publish/Subscribe Services in Sensor Networks* (425,000USD, 2009-2014, not funded)
  - PI, NSF, *CSR-DMSS, SM: Effective Target Localization and Tracking in Low-Cost Sensor Networks without Geographic Information* (co-PIs: R. Morris, R. Chen, X. Nguyen, 389,381USD, 9/1/2008-8/31/2011, not funded)
  - Co-PI, NSF, *Human Adaptive Dynamics in Social Networks* (PI: T. Killingback, 749,505USD, 9/1/2008 - 8/31/2011, not funded)
  - Sole PI, NSF, *CAREER: Publish/Subscribe Middleware for Sensor Networks* (400,000USD, 2007-2012, not funded)

### Internal Funding

- Awards
  - Sole PI, UMass Boston Davis Foundation Grant (Pi<sup>2</sup>), *ECP: Excellence in Computer Programming* (5,510USD, Spring 2011)
  - PI, UMass Boston's FIPSE program, *SensorCloud: A Sensor Networks Testbed for Geospatial Analysis* (other PIs: J. Suzuki, R. Morris, 24,108USD, FY 2008)
  - Sole PI, UMass Boston's Proposal Development Grant, *Multidimensional Publish/Subscribe Services in Sensor Networks* (7,000USD, 3/2008-6/2009)

- Sole PI, Ohio Board of Regents/University of Dayton, *Fast Information Retrieval in Decentralized Networks* (PI, 5500USD, Summer 2006)
- Sole PI, Ohio Board of Regents/University of Dayton, *Congestion Adaptive Routing in Mobile Ad hoc Networks* (PI, 6000USD, Summer 2005)
- Sole PI, Ohio Board of Regents/University of Dayton, *Video on Demand in Mobile Ad hoc Networks: A Technology for the Next Generation* (PI, 4000USD, Summer 2004)
- Other Proposals
  - Co-PI, University of Massachusetts' 2009 Science and Technology (S&T) Initiatives Fund, *MassDFL: The Massachusetts Digital Forensics Laboratory for Tracing Cyber Criminals* (PIs: X. Fu & J. Wang, 136,000USD, not funded)

## HONORS AND AWARDS

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- **Best Paper Award**, 17<sup>th</sup> IEEE Conf. on Computer Communications and Networks, 2008
- **Order of Pegasus Award**, University of Central Florida, 2003 (highest student honor, awarded to the top 12 out of 40,000+ students)
- **IEEE Outstanding Graduate Student Award**, IEEE Orlando, 2002
- **Hillman Award** for Distinguished Doctoral Research, University of Central Florida, 2002
- **Kuersten Scholarship**, University of Central Florida, 2000-2001
- **Provost's Award**, University of Central Florida, 1999-2000
- **Best Paper Recognition**, Int'l Conf. on Data Warehousing and Knowledge Discovery, 1999
- **Presidential Award** from Vietnam National University for achievement in research, 1996
- **Ranked 2<sup>nd</sup> and 3<sup>rd</sup>**, High School Mathematics Contest (nation-wide), annually organized by Vietnamese Magazine of Youth and Mathematics, 1991, 1992, respectively
- **Two-time Qualifier**, Vietnam National Mathematics Olympiad (1991, 1992)

## RESEARCH STUDENTS

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### PhD (4 current)

- Shilpa Ghadge (start 1/09, co-advise with Bala Sundaram and Tim Killingback), Khanh Nguyen (start 9/07), Charlie Pham (start 1/08), Binh Tran (start 9/08, co-advise with Dan Simovici)

### MS

- Thesis students (4): Alex Dusenbery (graduated Spring 2012, thesis "Measuring and Modeling Investment Behavior in a Social Network"), Phuong Nguyen (graduated 8/2009, thesis "Evaluation of PUB-2-SUB, a Publish/Subscribe Technique for P2P Networks"), Salini Pamidimukkala (graduated 5/07, thesis "Development of A Relevance-Feedback Image Retrieval System Based On Multiple-Instance Learning", employment: LexisNexus), Harish Raghavendra (thesis "Congestion Adaptive Routing in Wireless Mobile Ad hoc networks", graduated 5/06, employment: Intuit)
- Non-thesis students (1): Samatha Palugulla (worked as RA during 2007-2008, graduated 5/2009)

### Undergraduate

- Stephen Igbiovvia ( worked as RA under NSF/REU during Spring & Summer 2008), Mike Pateras (worked as RA during Spring 2004)

### **Student Awards**

- Binh Tran, Research Excellence Award, 2010 (1<sup>st</sup> place at UMass Boston CS Doctoral Research Symposium, 2010)
- Charlie Pham, NSF Travel Student Award, WASA 2009
- Shilpa Ghadge, Research Excellence Award, 2009 (1<sup>st</sup> place at UMass Boston CS Doctoral Research Symposium, 2009)
- Charlie Pham, Research Excellence Award, 2009 (3<sup>rd</sup> place at UMass Boston CS Doctoral Research Symposium, 2009)
- Stephen Ignobivia, McNair Scholarship, 2008
- Raj Rasam, Summer Research Award, CS Dept., University of Dayton, 2007
- Harish Raghavendra, Outstanding Graduate Student Award, CS Dept., University of Dayton, 2006
- Mike Pateras, Learn, Lead, and Serve Award, University of Dayton, 2004

### **Thesis Committees**

- PhD dissertation (6): Swami Iyer (PhD, current, advisor: Tim Killingback) Chonho Lee (PhD, graduated 2010, advisor: Jun Suzuki), Hui Dong (PhD, graduated 2010, advisor: Robert Morris), Zhimin Wang (PhD, graduated 2010, advisor: Robert Morris), Pruet Boonma (PhD, graduated 2009, advisor: Jun Suzuki), Hiroshi Wada (PhD, graduated 2009, advisor: Jun Suzuki), Yann-Ael Le Borgne (PhD, graduated 2009, Universite Libre De Bruxelles, advisor: Gianluca Bontempi)
- MS dissertation (4): Bingchun Zhu (MS, graduated 2011, advisor: Jun Suzuki), Hiroshi Nohmi (MS, graduated 2009, advisor: Marc Pomplun), Joshua Reyes (MS, graduated 2009, advisor: Tim Killingback), Yuxin Wang (MS, graduated 2008, advisor: Jun Suzuki)