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Old Dominion University  
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## EXPERIENCE

- Old Dominion University**, Norfolk, VA July 2006 – present  
*Assistant Professor of Computer Science*
- Clemson University**, Clemson, SC August 2004 – July 2006  
*Assistant Professor of Computer Science*
- University of North Carolina**, Chapel Hill, NC July 2003 – July 2004  
*Visiting Assistant Professor of Computer Science*

## EDUCATION

- University of North Carolina**, Chapel Hill, NC  
Computer Science  
*Doctor of Philosophy*, August 2003  
“Investigating the Use of Synchronized Clocks in TCP Congestion Control”  
Advisor: Kevin Jeffay  
*Master of Science*, May 1998
- Northeast Louisiana University**, Monroe, LA  
Computer Science, minor in Mathematics  
*Bachelor of Science*, May 1996 (Summa Cum Laude)

## RESEARCH INTERESTS

Mobile Ad-hoc Networks, Wireless Networking, Sensor Networks, Vehicular Networks, Information Visualization, Web Science, Bibliometrics

## STUDENTS ADVISED

- *PhD Advisor*: Mohammad Almalag, Shahram Mohrehkesh, Hadi Arbabi (Aug 2011), Khaled Ibrahim (May 2011), Gongjun Yan (co-advised with Stephan Olariu, May 2010)
- *PhD Committee*: Ahmed AlSum, Samiur Arif, Chuck Cartledge, Samy El Tawab, Martin Klein (Aug 2011), Mahmoud Abuelela (May 2011), Filip Cuckov (ECE, Dec 2009)
- *MS Thesis*: Mat Kelly, Kalpesh Padia, Andrew Schaefer, Prashanth Adurthi (Aug 2006, Clemson University), Pankaj Sharma (Aug 2006, Clemson University)
- *MS Thesis Committee*: Vikas Ashok (May 2011), Rabia Haq (Dec 2008), Hadi Arbabi (Aug 2007)
- *MS Projects*: Bradley Dupont (Dec 2011), Spardha Jaiswal (May 2010), Rajat Singh (May 2009), Madhukesh Wali (May 2009), Sumanth Gelle (May 2008), Omkar Kasinadhuni (May 2008), Siva Tella (May 2008), Gyanesh Choudhary (Dec 2007)

## COURSES TAUGHT

- CS 312 - Internet Concepts (Fall 2011, Fall 2010, Fall 2009, Fall 2008)

- CS 455/555 - Introduction to Networks and Communications (Spring 2011, Fall 2009, Fall 2008, Fall 2007, Fall 2006)
- CS 697 - Independent Study: Cloud Computing (Fall 2009)
- CS 791/891 - VANET Seminar (Fall 2007)
- CS 795/895 - Information Visualization (Fall 2011)
- CS 795/895 - Vehicular Networks (Fall 2010, Spring 2010, Spring 2008, Spring 2007)
- CS 796/896 - Visual Analytics Seminar (Spring 2011)
- CS 796/896 - Advanced Networking Seminar (Spring 2010)
- Clemson: CPSC 360 - Network Programming (Spring 2006, Fall 2005, Spring 2004)
- Clemson: CPSC 481 - Undergraduate Research (Spring 2006)
- Clemson: CPSC 826/825 - Internetworking (Fall 2005, Fall 2004)
- UNC: COMP 14 - Introduction to Programming in Java (Spring 2004, Fall 2003, Summer 2000)

## PUBLICATIONS (ODU authors in bold)

### BOOKS

**S. Olariu** and **M.C. Weigle** (editors), *Vehicular Networks: From Theory to Practice*, CRC Press / Taylor & Francis, March 2009.

### BOOK CHAPTERS

**M.C. Weigle**, **S. Olariu**, **M. Abuelela** and **G. Yan**, Use of Infrastructure in VANETs, In *Vehicular Networks: From Theory to Practice*, Stephan Olariu and Michele C. Weigle, Eds. CRC Press / Taylor & Francis, Boca Raton, FL, pp. 7.1–7.20, 2009.

**G. Yan**, **K. Ibrahim** and **M.C. Weigle**, Vehicular Network Simulators, In *Vehicular Networks: From Theory to Practice*, S. Olariu and M. C. Weigle, Eds. CRC Press / Taylor & Francis, Boca Raton, FL, pp. 13.1–13.22, 2009.

### JOURNAL PUBLICATIONS

1. **M.C. Weigle**, L. Cheng, J. Kaur, and V. Kulkarni, Generalized Stochastic Performance Models for Loss-based Congestion Control, *Computer Communications*, Vol. 33, No. 4, March 2010, pp. 513–525.
2. **G. Yan**, **S. Olariu**, and **M.C. Weigle**, Providing Location Security in Vehicular Ad-hoc Networks, *IEEE Wireless Communications, Special Issue on On-the-Road Communications*, Vol. 16, No. 6, December 2009, pp. 48–55.
3. R.R. Brooks, B. Pillai, M. Pirretti, and **M.C. Weigle**, Multicast Encryption Infrastructure for Security in Sensor Networks, *International Journal of Distributed Sensor Networks*, Vol. 5, No. 2, April 2009, pp. 139–157.
4. **G. Yan**, **S. Olariu**, and **M.C. Weigle**, Providing VANET Security Through Active Position Detection, *Computer Communications: Special Issue on Mobility Protocols for ITS/VANET*, Vol. 31, No. 12, July 2008, pp. 2883–2897.
5. R.R. Brooks, B. Pillai, **M.C. Weigle**, and M. Pirretti, Optimal Layout of Multicast Groups using Network Embedded Multicast Security in Ad Hoc Sensor Networks, *International Journal of Distributed Sensor Networks*, Vol. 3, No. 3, July 2007, pp. 273–287.

6. **M.C. Weigle**, K. Jeffay, and F.D. Smith, Quantifying the Effects of Recent Protocol Improvements to TCP: Impact on Web Performance, *Computer Communications*, Vol. 29, No. 15, September 2006, pp. 2853–2866.
7. **M.C. Weigle**, P. Adurthi, F. Hernandez-Campos, K. Jeffay, and F.D. Smith, Tmix: A Tool for Generating Realistic TCP Application Workloads in ns-2, *ACM Computer Communication Review*, Vol. 36, No. 3, July 2006, pp. 67–76.
8. **M.C. Weigle**, K. Jeffay, and F.D. Smith. Delay-Based Early Congestion Detection and Adaptation: Impact on Web Performance, *Computer Communications*, Vol. 28, No. 8, May 2005, pp. 837–850.

#### CONFERENCE PUBLICATIONS

1. **K. Padia**, **Y. Anwar** and **M. C. Weigle**, Visualizing Digital Collections at Archive-It, In *Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL)*. Washington, DC, June 2012.
2. **M. Kelly** and **M. C. Weigle**, WARCreate - Create Wayback-Consumable WARC Files from Any Webpage (demo), In *Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL)*. Washington, DC, June 2012.
3. **S. Mohrehkesh**, **T. Nadeem** and **M. C. Weigle**, Efficient Context-Aware Content Adaptation for Mobile Devices (poster), In *Proceedings of IEEE INFOCOM*. Orlando, FL, March 2012.
4. **S. Ainsworth**, **A. AlSum**, **H. SalahEldeen**, **M. C. Weigle**, and **M. L. Nelson**, How Much of the Web Is Archived?, In *Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL)*, Ottawa, Canada, June 2011.
5. **Danda B. Rawat**, Bhed B. Bista, Gongjun Yan and **Michele C. Weigle**, Securing Vehicular Ad-Hoc Networks Against Malicious Drivers: A Probabilistic Approach, In *Proceedings of the International Conference on Complex, Intelligent, and Software Intensive Systems (CISIS)*, Seoul, Korea, June 2011.
6. **H. Arbabi** and **M. C. Weigle**, Monitoring Free-Flow Traffic using Vehicular Networks, In *Proceedings of the IEEE Intelligent Vehicular Communications System Workshop (IVCS)*, Las Vegas, NV, January 2011.
7. **H. Arbabi** and **M. C. Weigle**, Using DTMon to Monitor Transient Flow Traffic, In *Proceedings of the IEEE Vehicular Networking Conference (VNC)*, Jersey City, NJ, December 2010.
8. **H. Arbabi** and **M. C. Weigle**, Highway Mobility and Vehicular Ad-Hoc Networks in ns-3, In *Proceedings of the Winter Simulation Conference*. Baltimore, MD, December 2010.
9. **M. Almalag** and **M. C. Weigle**, Using Traffic Flow for Cluster Formation in Vehicular Ad-hoc Networks, In *Proceedings of the IEEE Workshop On User MObility and VEhicular Networks (ON-MOVE)*. Denver, CO, October 2010, pp. 631-636.
10. **G. Yan**, **S. Olariu** and **M. C. Weigle**, Cross-Layer Location Verification Enhancement in Vehicular Networks, In *Proceedings of the IEEE Intelligent Vehicles Symposium*. San Diego, June 2010.

11. **G. Yan, W. Yang, M. C. Weigle, S. Olariu and D. Rawat**, Cooperative Collision Warning through Mobility and Probability Prediction, In *Proceedings of the IEEE Intelligent Vehicles Symposium*. San Diego, June 2010.
12. **H. Arbabi and M. C. Weigle**, Using Vehicular Networks to Collect Common Traffic Data (poster), In *Proceedings of the ACM International Workshop on Vehicular Inter-networking (VANET)*. Beijing, September 2009, pp. 117–118.
13. **D. Rawat, G. Yan, D. C. Popescu, M. C. Weigle, and S. Olariu**, Dynamic Adaptation of Joint Transmission Power and Contention Window in VANET, In *Proceedings of the IEEE Vehicular Technology Conference - Fall*. Anchorage, Alaska, September 2009.
14. **G. Yan, M. C. Weigle, and S. Olariu**, A Novel Parking Service Using Wireless Networks, *Proceedings of the IEEE International Conference on Service Operations, Logistics and Informatics*. Chicago, July 2009.  
*Best Student Paper Award*
15. **K. Ibrahim, M.C. Weigle, and M. Abuelela**, p-IVG: Probabilistic Inter-Vehicle Geocast for Dense Vehicular Networks, *Proceedings of the IEEE Vehicular Technology Conference - Spring*. Barcelona, Spain, April 2009.
16. **K. Ibrahim, M.C. Weigle, and G. Yan**, Light-Weight Laser-Aided Position Verification for CASCADE, *Proceedings of the International Conference on Wireless Access in Vehicular Environments (WAVE)*. Dearborn, MI, December 2008.
17. **G. Yan, Y. Wang, M.C. Weigle, S. Olariu, and K. Ibrahim**, WEHealth: A Secure and Privacy Preserving eHealth Using NOTICE, *Proceedings of the International Conference on Wireless Access in Vehicular Environments (WAVE)*. Dearborn, MI, December 2008.
18. **K. Ibrahim and M.C. Weigle**, CASCADE: Cluster-based Accurate Syntactic Compression of Aggregated Data in VANETs, *Proceedings of the IEEE International Workshop on Automotive Networking and Applications (AutoNet)*, New Orleans, LA, December 2008.
19. **G. Yan, S. Olariu, M.C. Weigle and Mahmoud Abuelela**, SmartParking: A Secure and Intelligent Parking System Using NOTICE, *Proceedings of the IEEE International Conference on Intelligent Transportation Systems*, Beijing, China, October 2008, pp 569–574.
20. **K. Ibrahim and M.C. Weigle**, Optimizing CASCADE Data Aggregation for VANETs, *Proceedings of the International Workshop on Mobile Vehicular Networks (MoVeNet)*, Atlanta, GA, September 2008, pp 724–729.
21. **K. Ibrahim and M.C. Weigle** Towards an Optimized and Secure CASCADE for Data Aggregation in VANETs (poster), *Proceedings of the ACM International Workshop on Vehicular Inter-networking (VANET)*, San Francisco, CA, September 2008, pp. 84–85.
22. **M. Abuelela, S. Olariu, and M.C. Weigle**, NOTICE: An Architecture for Notification of Traffic Incidents, *Proceedings of the IEEE Vehicular Technology Conference - Spring*, Singapore, May 2008, pp. 3001–3005.
23. **K. Ibrahim and M.C. Weigle**, ASH: Application-aware SWANS with Highway Mobility (poster), *Proceedings of the IEEE INFOCOM Workshop on MOBILE Networking for Vehicular Environments (MOVE)*, Phoenix, AZ, April 2008.

24. **S. Rizvi, S. Olariu, and M.C. Weigle**, and M. Rizvi. A Novel Approach to Reduce Traffic Chaos in Emergency and Evacuation Scenarios, *Proceedings of the IEEE Vehicular Technology Conference - Fall*, Baltimore, MD, October 2007, pp. 1937–1941.
25. **K. Ibrahim and M.C. Weigle**. Accurate Data Aggregation for VANETs (poster), *Proceedings of the ACM International Workshop on Vehicular Ad Hoc Networking (VANET)*, Montreal, Canada, September 2007, pp. 71–72.
26. **G. Yan, G. Choudhary, M.C. Weigle**, and **S. Olariu**. Providing VANET Security Through Active Position Detection (poster). *Proceedings of the ACM International Workshop on Vehicular Ad Hoc Networking (VANET)*, Montreal, Canada, September 2007, pp. 73–74.
27. **M.C. Weigle and S. Olariu**, Intelligent Highway Infrastructure for Planned Evacuations, *Proceedings of the International Workshop on Research Challenges in Next Generation Networks for First Responders and Critical Infrastructures (NetCri)*, New Orleans, LA, April 2007, pp. 594–599.
28. **S. Rizvi, S. Olariu**, M. Rizvi, and **M.C. Weigle**, A Traffic Chaos Reduction Approach for Emergency Scenarios, *Proceedings of the International Workshop on Research Challenges in Next Generation Networks for First Responders and Critical Infrastructures (NetCri)*, New Orleans, LA, April 2007, pp. 576–578.
29. **M.C. Weigle**, Improving Confidence in Network Simulations, *Proceedings of the Winter Simulation Conference* (Invited Paper), Monterey, CA, December 2006, pp. 2188–2194.
30. **M.C. Weigle**, D. Vembar, and Z. Du, Assessing the Impact of Multiple Active Queue Management Routers, *Proceedings of Globecom*, San Francisco, CA, November 2006.
31. **M.C. Weigle** and M. Thottan, Impact of 802.11e EDCA on Mixed TCP-based Applications, *Proceedings of the International Wireless Internet Conference (WICON)*, Boston, MA, August 2006.
32. **M.C. Weigle**, Pankaj Sharma, and Jesse Freeman, Performance of Competing High-Speed TCP Flows, *Proceedings of IFIP Networking*, Coimbra, Portugal, May 2006, pp. 476–487.
33. J. Cao, W.S. Cleveland, Y. Gao, K. Jeffay, F.D. Smith, and **M.C. Weigle**. Stochastic Models for Generating Synthetic HTTP Source Traffic, *Proceedings of IEEE INFOCOM*. Hong Kong, March 2004, pp. 1547–1558.
34. **M.C. Weigle**, K. Jeffay, and F.D. Smith. Quantifying the Effects of Recent Protocol Improvements to Standards-Track TCP, *Proceedings of the IEEE/ACM International Symposium on Modeling, Analysis and Simulation of Computer Telecommunication Systems (MASCOTS)*. Orlando, FL, October 2003, pp. 226–229.
35. T. Hudson, **M.C. Weigle**, K. Jeffay, and R. Taylor, II. Experiments in Best-Effort Multimedia Networking for a Distributed Virtual Environment. *Proceedings of SPIE/ACM Multimedia Computing and Networking (MMCN)*. San Jose, CA, January 2001, pp. 88–98.

36. **M. Clark** and K. Jeffay. Application-Level Measurements of Performance on the vBNS. *Proceedings of the IEEE International Conference on Multimedia Computing and Systems*. Florence, Italy, June 1999, Vol. II, pp. 362–366.
37. P. Nee, K. Jeffay, **M. Clark**, and G. Danneels. A Two-Dimensional Audio Scaling Enhancement to an Internet Videoconferencing System. *Proceedings of the International Workshop on Audio-Visual Services over Packet Networks*. Aberdeen, Scotland, UK, September 1997, pp. 201–206.

## CONFERENCE POSTER PRESENTATIONS (not in proceedings)

**K. Ibrahim** and **M.C. Weigle**, Securing CASCADE Data Aggregation for VANETs (poster), Presented at the *International Workshop on Mobile Vehicular Networks (MoVeNet)*, Atlanta, GA, September 2008.

**S.R. Rizvi**, **M.C. Weigle** and Mona E. Rizvi, InVANETs for First Responders (poster), Presented at *ACM SIGCOMM*, Seattle, WA, August 2008.

**M.C. Weigle**, K. Jeffay, and F.D. Smith. Sync-TCP: Using GPS Synchronized Clocks for Early Congestion Detection in TCP (poster), Presented at *ACM SIGCOMM*. Stockholm, Sweden, August 2000.

## GRANTS AND AWARDS

### FUNDED

“Collaborative Research:CSR:Small:An Architecture for the Emergency Re-tasking of Wireless Sensor Networks (ALERT)”

PI, with Stephan Olariu and Jason Hallstrom (Clemson)

Aug 2011 – Aug 2014, NSF (CNS 1116238), \$358,549 to ODU (total: \$440,000)

“Identifying and Archiving Culturally Important Conversations in the Social Web”

Co-PI, with Michael L. Nelson (CS), Kathie Gossett (English, CeME Lab), and Liza Potts (English, CeME Lab)

Jan 2011 – Jun 2011, ODU Office of Research, Multidisciplinary Seed Grant, \$54,000.

“Tutorials for Computer Aided Design Methodologies in Computer Engineering”

With Filip Cuckov (ECE), Lee Belfore II (ECE), and Amy Adcock (STEM Educational and Professional Studies)

2011 – 2012, ODU Faculty Innovator Grant, \$2,600.

“NeTS-WN: An Architecture for the Notification of Traffic Incidents and Congestion (NOTICE)”

PI, with Stephan Olariu (CS) and Asad Khattak (Civil and Environmental Engineering)

Aug 2007 – Aug 2011, NSF (CNS 0721586), \$400,000

REU supplement, CNS 0832311, May 2008, \$6000

REU supplement, CNS 0939451, July 2009, \$8000

“Collaborative Research: CRI-CRD: Synthetic Traffic Generation Tools and Resources: A Community Resource for Experimental Networking Research”

PI, with Kevin Jeffay (UNC), F.D. Smith (UNC), Paul Barford (Wisconsin), Amin Vahdat (UCSD)

Aug 2007 – Aug 2011, NSF (CNS 0709058), \$201,794 to ODU (total: \$799,743)  
REU supplement, CNS 0830334, May 2008, \$6000  
REU supplement, CNS 0709058, July 2010, \$8175

“Exploring the Use of Mobile Ad-Hoc Networks for Inter-Vehicular Communication”  
Nov 2005 – Nov 2006, Clemson University Research Grant Committee, \$2,979

## IN SUBMISSION

“iSense: Platform for Monitoring and Analyzing Traffic at Signalized Intersections”, Co-PI, with Tamer Nadeem and Mecit Cetin (CEE), submitted Oct 2011, NSF CRI-II, \$458,508.

“ADVANCE: Ad Hoc Vehicular Clouds for Urban Congestion Mitigation”, Co-PI, with Tamer Nadeem, Stephan Olariu, and Michael Fontaine (Virginia Center for Innovative Transportation Research, UVA), submitted Dec 2011, NSF CNS-CSR, \$457,616.

## PROFESSIONAL ACTIVITIES

**Guest Editor:** *Ad Hoc Networks*, Special Issue on Recent Advances in Vehicular Communications and Networking (2012)

**Technical Committee Chair:** IEEE ITS Society Technical Committee on Mobile Communication Networks (Co-Chair 2011-)

**Steering Committee:** International Workshop on Intelligent Vehicular Networks (InVeNET) (2009-)

**Technical Program Committee Chair:** IEEE Vehicular Networks and Applications Workshop (Vehi-Mobi) (Vice-Chair 2010); IEEE Workshop on Networking for Intelligent Vehicles and Infrastructures (NiVi) (Vice-Chair 2009)

**Technical Program Committee Member:** ACM/IEEE Joint Conference on Digital Libraries (2012); International Wireless Communications and Mobile Computing Conference, Mobile Computing Symposium (2011); IEEE PIMRC track on Intelligent Transportation Networks (2011); ACM Workshop on Vehicular Internetworking (VANET) (2010, 2009, 2008); Networking Networking Women Workshop (2010); IEEE Workshop on Intelligent Vehicular Communication Systems (IVCS) (2010, 2009); IEEE International Workshop on Vehicular Networking (VON) (2009, 2008); International Workshop on Network Simulation Tools (NSTools) (2009); IEEE International Workshop on Network Security and Privacy (NSP) (2008); International Workshop on Collaboration and Cognition in Next Generation Networks (CoNGN) (2008); International Workshop on Wireless Vehicular Networking Technology (VINT) (2008); IEEE Workshop on Mission-Critical Networking (2008)

**Session Chair:** ACM Workshop on Vehicular Internetworking (VANET) (2008); Workshop on Research Challenges in Next Generation Networks for First Responders and Critical Infrastructures (2007); Winter Simulation Conference (2006)

**Invited Panelist:** “Architectures for Next Generation Networks for Critical Infrastructure” at the International Workshop on Research Challenges in Next Generation Networks for First Responders and Critical Infrastructures - NetCri (2007)

**Proposal Reviewer:** Province of British Columbia Natural Resources and Applied Sciences (NRAS) Endowment (2010); Austrian Science Fund (2009); National Science Foundation (2008); Israel Science Foundation (2007)

**Reviewer:** IEEE INFOCOM (2011, 2007, 2006, 2005, 2004); *Computer Networks* (2011); *World Wide Web Journal* (2011); *Telecommunications Systems Journal* (2011); *Wireless Networks* (2011); *IEEE Transactions on Vehicular Technology* (2011, 2009, 2008); *IEEE Transactions on Intelligent Transportation Systems* (2011, 2009); *IEEE Transactions on Parallel and Distributed Systems* (2011, 2010); *IEEE Journal on Selected Areas in Communications—Special Issue Vehicular Communications and Networks* (2010); *Sensors* (2010); *Ad Hoc Networks* (2010, 2009); IEEE Milcom (2010); *IEEE Transactions on Mobile Computing* (2009); *Computer Communications* (2010, 2009, 2007, 2006); *IEEE Wireless Communications Magazine* (2009); IEEE Consumer Communications and Networking Conference (2009); *Journal on Intelligent Transportation Systems* (2009, 2008); IEEE Vehicular Technology Conference (2009, 2008); *Pervasive and Mobile Computing* (2008); *IEEE Communications Letters* (2007); IEEE PIMRC (2007); *ACM Transactions on Modeling and Simulation* (2006); *ACM Computer Communications Review* (2006); *International Journal of Distributed Sensor Networks* (2006); *Computer Networking: A Top-Down Approach*, Fourth Edition (2006); International Conference on Distributed Computing and Sensor Systems (2005); ACM Symposium on Applied Computing (2004); *Java Programming: From Problem Analysis to Program Design*, Second Edition (2004)

**University Committees:** ODU Library Committee (2007-present), ODU Academic Integrity Inquiry Committee (2009)

**Departmental Committees:** Faculty Search Committee (2011), CS Chair Search Committee (2008), Graduate Studies Committee (2007-present), Richard Cheng Chair Search Committee (2010, 2007)

**Member:** IEEE, IEEE ComSoc, IEEE ComSoc Technical Committee on Computer Communications, ACM, ACM SIGCOMM, ACM SIGMOBILE

## HONORS AND AWARDS

**Award:** ODU Division of Student Affairs Shining Star Award (Spring 2011)

**Selected Participant:** TRUST's Women's Institute for Summer Enrichment Program (2007)

**Fellowships:** UNC Department of Computer Science Alumni Fellowship (2002–2003); NSF Graduate Research Fellowship (1996–1999); Microsoft UPE Scholarship (1996); Phi Kappa Phi Fellowship, honorable mention (1996)

**Member:** Phi Kappa Phi (1996); Upsilon Pi Epsilon, computing sciences honors (1995)