

BIOGRAPHICAL SKETCH

Jared Oluoch, Ph.D.

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Professional Preparation

Oakland University, Rochester, MI; Computer Science & Informatics; Ph.D., 2015.

Professional Appointments

2015–present: **Assistant Professor**, University of Toledo, Toledo, OH.

2016–present: **Program Director - Computer Science & Engineering Technology and IT**, University of Toledo, Toledo, OH.

2011–2015: **Graduate Assistant**, Oakland University, Rochester, MI.

2008–2009: **Research Assistant**, University of Nebraska Omaha, Omaha, NE.

Research Interests

Information Security; Trust & Reputation Management in Vehicular Ad Hoc Networks (VANETs); Channel Coding; Localization in Wireless Sensor Networks; and Intrusion Detection.

Funded Research

1. **NSF** - Supplement – Understanding How Integrated Computational Thinking, Engineering Design, and Mathematics Can Help Students Solve Scientific and Technical Problems in Career Technical Education. 08/18 - 08/20; **\$137,031** (PI).
2. **NSF** - Understanding How Integrated Computational Thinking, Engineering Design, and Mathematics Can Help Students Solve Scientific and Technical Problems in Career Technical Education. 09/17 - 08/20; **\$1,818,159** (PI).
3. **NSF** - I-Corps Teams: Addressing Information Security with Channel Codes. 07/16 - 02/17; **\$50,000** (PI).

Publications

1. Albehadili, A., Ali, A., Jahan, F., Javaid, A., **Oluoch, J.**, & Devabhaktuni, V. Machine Learning-based Primary User Emulation Attack Detection In Cognitive Radio Networks using Pattern Described Link-Signature (PDLs). *Wireless Telecommunications Symposium WTS2019, April 19-12, 2019, New York City, USA*) Accepted.
2. Zhu, Y., Gurary, J., Corser, G., **Oluoch, J.**, Alnahash, N., Fu, H., & Tang, J. (2018). CMAPS: A Chess-Based Multi-Facet Password Scheme for Mobile Devices. *IEEE Access*.
3. Albehadali, A., Al Shamaileh, K., Javaid, A., **Oluoch, J.** & Devabhaktuni, V. (2018). An Upper Bound on PHY-Layer Key Generation for Secure Communications Over a Nakagami-M Fading Channel With Asymmetric Additive Noise *IEEE Access*.
4. Chowdhury, J.S., Elkin, C., Devabhaktuni, V., **Oluoch, J.** & Rawat. D.B. (2016). Advances on Localization Techniques for Wireless Sensor Networks: A Survey, *Computer Networks Journal*.
5. **Oluoch, J.** (2016). VANETs: Security Challenges and Future Directions. World Academy of Science, Engineering and Technology, *International Journal of Computer, Electrical, Automation, Control and Information Engineering*, 10(6), 864-868.
6. **Oluoch, J.** (2016). A Distributed Reputation Scheme for Situation Awareness in Vehicular Ad Hoc Networks (VANETs). *IEEE International Multi-Disciplinary Conference on Cognitive Methods in Situation Awareness and Decision Support (CogSIMA)*. San Diego, CA, USA.
7. **Oluoch, J.** (2015). A Theoretical Framework for Trust Management in Vehicular Ad Hoc Networks (VANET). *International Journal of Trust Management in Computing & Communications, Vol. 3, No. 2, 2015*.
8. **Oluoch, J.**, Fu. H., & Ogunyemi. T. (2015). Enhancing Reputation of Intelligent Vehicles Through Wisdom of Crowd. 2015 *Collective Intelligence Conference*, Santa Clara, CA, USA.
9. Gurray, J., Zhu, Y., Corser, G., **Oluoch, J.**, Alnahash. N., & Fu, H. (2015). MAPS: A Multi-Dimensional Password Scheme for Mobile Authentication. In *Proceedings of the 2015 International Conference on Interactive Tabletops and Surfaces (ITS 2015)*. ACM.
10. **Oluoch, J.**, Corser, G., Fu. H., Zhu. Y., & Leng. S. (2014). Simulation Study of Trust Management Schemes in Vehicular Ad Hoc Networks. 2014 *American Society for Engineering Education*, North Central Section Conference (ASEE NCS Conference), Rochester, MI, USA.
11. Corser, G. P., Arslanturk, S., **Oluoch, J.**, Fu, H., & Corser, G. E. (2013). Knowing the Enemy at the Gates: Measuring Attacker Motivation. *International Journal of Interdisciplinary Telecommunications and Networking (IJITN)*, 5(2), 83-95.

12. **Oluoch, J.**, Fu, H., Younang, A., Zhu, Y., & Tri-Tran, B. (2012). A simulation study of impacts of collaborative worm hole attacks in mobile ad hoc networks (MANETs). In *Proceedings of the 2012 Information Security Curriculum Development Conference* (pp. 40-45). ACM.

Courses

1. CSET 1100 - Introduction to Computer Science & Engineering Technology.
2. CSET 1200 - Object Oriented Programming & Data Structures.
3. CSET 2200 - PC & Industrial Networks.
4. CSET 3200 - Client-Server Computing.
5. CSET 4100 - Server-Side Programming.
6. CSET 4750 - Computer Networks & Data Communications.
7. EECS 6900 - Independent Research.
8. EECS 6960 - Research and Thesis.
9. EECS 8960 - Dissertation.

Graduate Students

1. Graduated
 - (a) Merl Creps Jr. - MS (Primary Adviser). Spring 2018. First Job after graduation – Employed full-time while pursuing Masters degree.
 - (b) Shahida Malik - MS (Primary Adviser). Fall 2017. First Job after graduation – PhD student in EECS at UT.
 - (c) Hema Gudavalli - MS (Primary Adviser). Fall 2017. First Job after graduation – Software Development Engineer at Gartner Studios.
 - (d) Jizhou Tong - Ph.D (Committee Member). Summer 2017. First Job after graduation – Software Engineer at Mercury Systems Inc.
 - (e) Tashnim Chowdhury - MS (Primary Adviser). Fall 2016. First Job after graduation – Software Engineer at POST-IS.
2. In Progress
 - (a) Abdulsahib Albehadili - Ph.D. (Primary Adviser).
 - (b) Merl Creps Jr. - Ph.D. (Primary Adviser).
 - (c) Mohammed Shah Alam - Ph.D. (Primary Adviser).
 - (d) Akshay Mathur - Ph.D. (Co-Adviser).
 - (e) Subhrajit Majumder - Ph.D. (Co-Adviser).

- (f) Tauheed Khan - Ph.D (Committee Member).
- (g) Shahida Malik - Ph.D. (Committee Member).
- (h) Mohini Billade - MS (Primary Adviser).
- (i) Mohammed Rahul Amin - MS (Primary Adviser).

Adviser – Senior Capstone Projects

1. Spring 2018

- (a) Thermal Application Printing (TAP). Students: Alex Pigulski, Troy Sigel, Charles Winters, Elmer Fink & Salem Aldossary.

2. Fall 2017

- (a) A Calender Information System for Events. Students: Miranda Ebraheim, Shamal Patel, & Justin Bradford.

3. Spring 2017

- (a) A Social Media Platform for Job Recruitment. Students: Shawn Campbell, Artie Mitchell, & Austin Sargent.
- (b) A Video Software for Home and Business Security. Students: Chelsea Kania, Corey Poulaff, & Lindsay Packard.
- (c) A Software System for a Packing Lot. Students: Yulexis Pacheco & Amir Khan.

4. Fall 2016

- (a) A Network Intrusion Detection Protocol. Students: John Gragg, Mouhamad Cheaib, Jon Snyder, & Charles Hempstead.

Honors Student

Christian Huss - CSET 1200 Object Oriented Programming & Data Structures - Fall 2016.

Honors and Awards

Nominee – 2016-17 University of Toledo Outstanding Adviser.

Nominee – 2017-18 University of Toledo Outstanding Adviser.

Nominee – 2018-19 University of Toledo Outstanding Adviser.

Service

1. Reviewer, IEEE Transactions on Services Computing. August 2018 to present.
2. Panelist – Technology Takes the Wheel Seminar Series. Spring 2018.
3. Drive Ohio Initiative Work Group – Summer 2018 to present.
4. Reviewer, IEEE Transactions on Broadcasting. Spring 2017 – present.

5. Panel Reviewer, NSF Computer Systems Research (CSR); CISE Research Infrastructure (CRI). Spring 2017.
6. Ad Hoc Reviewer, NSF Cyberlearning. 2017.
7. Inaugural UT Leadership Institute. December 2016 – May 2017.
8. Search Committee - Assistant Professor of Electrical Engineering Technology – Fall 2016, Fall 2017.
9. UT College of Engineering Diversity and Inclusion Committee. October 2016 – present.
10. Finance Committee IEEE Power Africa Initiative. October 2016 – present.
11. Program Director - Computer Science & Engineering Technology (CSET) and IT programs. 2016 – present. Advisor for 247 CSET students and 85 IT students. Numbers are as of Spring 2018.
12. Advisory Board (AB) member – University of Cincinnati Masters of Health Informatics program. October 2017 to date.
13. Member – University of Toledo College of Engineering 5-year Strategic Plan Graduate Programs workgroup. Fall 2017.
14. Member – University of Toledo College of Engineering 5-year Strategic Plan Diversity, Inclusion, and Community Engagement Strategic Plan workgroup. Fall 2017.

Invited Talk

Official Opening of New Engineering Center Oakland University, Rochester, MI, September 12, 2014.

Research News

1. NSF awards UT \$1.8 million grant to engage high school students with Cybersecurity. UT News. 09/20/17.
2. \$1.8M grant awarded for cybersecurity education. 13 abc. 09/19/17.
3. \$1.8M grant awarded for cybersecurity education. WTOL News. 09/19/17.
4. NSF Award UT \$1.8 Million Grant To Engage High School Students With Cybersecurity. Congresswoman Marcy Kaptur's Office. 09/18/17.