

ALMA ORACEVIC



E-mail: alma.oracevic@gmail.com

RESEARCH INTERESTS

5G Networks, Web application security, Security of the Internet of Things, Network Security, Secure Target Tracking, Target Detection, Radio Access Network Architecture, Multi Target Tracking, Software Defined Networking, Mobile Ad Hoc Networks, SD-MANET architecture design, Scalable wireless and mobile infrastructure, Network Function Virtualization, P4, Wireless Communication, Wireless Sensor Networks, Energy Consumption,

EDUCATION

Postdoctoral Fellowship, Electrical & Computer Engineering

September 2017 – September 2018

Georgia Institute of Technology, Atlanta, GA, USA

- Advisor: Prof. Ian F. Akyildiz
- Research Topic: 5G Networks, SDN Radio Access Network Architecture

Ph.D., Electrical Engineering

March 2010 – February 2016

University of Zagreb, Faculty of Electrical Engineering and Computing, CROATIA

- Advisors: Prof. Mladen Kos and Prof. Suat Ozdemir
- Thesis: “Secure and Reliable Object Tracking in Wireless Sensor Networks”

B.S., Electrical Engineering

September 2004 – March 2009

Faculty of Technical Sciences, Bihac, BOSNIA AND HERZEGOVINA

- GPA: 8.90/10.00 (Valedictorian in the department, college and university) Graduated with High Honors
- Best student Rector’s award

EMPLOYMENT HISTORY

Lecturer,

May 2018 – September 2018

Georgia Institute of Technology, The School of ECE at Georgia Tech, Atlanta, USA,

Postdoctoral Fellowship, Electrical & Computer Engineering,

September 2017 – September 2018

Georgia Institute of Technology, Atlanta, GA, USA

- Advisor: Prof. Ian F. Akyildiz

- Research Topic: 5G Networks, SDN Radio Access Network Architectur

Assistant Professor, September 2016 – present
Faculty of Technical Sciences, University of Bihac, Bihac, BOSNIA AND HERZEGOVINA,

Ph.D. Research August 2013 – October 2014
Wireless Sensor Networks and Data Mining Laboratory (KAVEM), Gazi Universit, Ankara, Turkey

- Secure Target Detection and Tracking in Wireless Sensor Networks, Security of Networks

Teaching Assistant, March 2009 – September 2016
Faculty of Technical Sciences, University of Bihac, Bihac, BOSNIA AND HERZEGOVINA

TEACHING EXPERIENCE

Lecturer, May 2018 – September 2018
Georgia Institute of Technology, The School of ECE at Georgia Tech, Atlanta, USA,

- Computer communications, Summer 2018

Assistant Professor September 2016 – present
Faculty of Technical Sciences, University of Bihac, Bihac, BOSNIA AND HERZEGOVINA

- Digital Signal Processing, Spring 2017
- Security and Privacy at the WWW, Spring 2017
- Computer Networks Security Spring 2017
- Fundamentals of Telecommunication, Spring 2017
- Basic Electrical Engineering II, Spring 2017
- Statistical Signal Processing, Fall 2016
- Telecommunications and Network programming, Fall 2016
- Basic Electrical Engineering I, Fall 2016
- Theory of Information and Coding, Fall 2016

Teaching Assistant March 2009 – September 2016
Faculty of Technical Sciences, University of Bihac, Bihac, BOSNIA AND HERZEGOVINA

- Digital Signal Processing, Spring 2010, Spring 2011, Spring 2012, Spring 2012
- Fundamentals of Telecommunication, Spring 2010, Spring 2011, Spring 2012, Spring 2012
- Theory of Information and Coding, Spring 2010, Spring 2011, Spring 2012, Spring 2012
- Basic Electrical Engineering II, Spring 2010, Spring 2011, Spring 2012, Spring 2012
- Statistical Signal Processing, Fall 2009, Fall 2010, Fall 2011, Fall 2012
- Telecommunications and Network programming, Fall 2009, Fall 2010, Fall 2011, Fall 2012
- Basic Electrical Engineering I, Fall 2009, Fall 2010, Fall 2011, Fall 2012

HONORS & ACTIVITIES

- **Fulbright** Visiting Scholar Award, A program of the United States Department of State Bureau of Educational and Cultural Affairs for Visiting Professors, August 2017- August 2018.
- **Fellowship for Visiting Research PhD Students** by The Scientific and Technological Research Council of Turkey (TUBITAK), 2013 – 2014.

- **Rector's award** for best student, Faculty of Technical Sciences, University of Bihac, Bihac, 2009.

SUBMITTED PUBLICATIONS

- **A. Oracevic**, C. Martins, and I. F. Akyildiz, "Software-defined Networking and the low-cost MQTT devices", submitted to IEEE Wireless and Microwave Technology Conference (WAMICON).
- C. Martins, **A. Oracevic**, J. Simonjan, and I. F. Akyildiz, "MQTT-SDN protocol", submitted to IEEE Cloudification of the Internet of Things Conference (CLOT).
- **A. Oracevic**, A. Kak, and I. F. Akyildiz, "Software-Defined Radio Access Networks: State of the Art", submitted to Computer Networks (Elsevier) Journal.

PUBLICATIONS

- **A. Oracevic**, S. Akbaz, and S. Ozdemir, "Secure and reliable object tracking in wireless sensor networks," in Computers & Security Journal, July 2017.
- **A. Oracevic**, S. Dilek, and S. Ozdemir, "Security in Internet of Things: A Survey," in The International Symposium on Networks, Computers and Communications (ISNCC), International IEEE Conference on, May 2017.
- **A. Oracevic**, S. Akbaz, S. Ozdemir, and M. Kos, "Secure Target Detection and Tracking in Mission Critical Wireless Sensor Networks," in Anti-counterfeiting, Security, and Identification (ASID), 8th International IEEE Conference on, December 2014, pp.1-5.
- **A. Oracevic** and S. Ozdemir, "A Survey of Secure Target Tracking Algorithms for Wireless Sensor Networks," in Computer Applications and Information Systems (WCCAIS), 2014 International IEEE Conference on, January 2014, pp. 1-6.
- **A. Oracevic** and S. Ozdemir, "Secure and Reliable Prediction Based Target Tracking for Wireless Sensor Networks," in Intelligent Systems, Modeling and Simulation (ISMS), 2014 Fifth International Conference on, January 2014, pp. 646-651.
- E. Mujcic, and **A. Oracevic**, "Correction of position error in Internet-based teleoperation," in Electrotechnical Conference (MELECON), 2012 16th International IEEE Mediterranean Conference on, 2012, pp. 148-151.
- E. Mujcic, and **A. Oracevic**, "Internet Based Teleoperations With Using Wave variables," in International Conference on Programmable Devices and Embedded Systems (PdeS), 11 IFAC/IEEE International Conference on, 2012, pp. 255-260.
- E. Mujcic, and **A. Oracevic**, "Correction of position error in internet-based teleoperation," in Telecommunications Forum (TELFOR), 2012 20th International IEEE Conference on, 2012, pp. 115-118.
- E. Mujcic, and **A. Osmanovic**, "Mikrokontroler PIC 16F877A i njegova primjena u teleoperacijama preko Interneta upotrebom valnih varijabli," in 9th International Scientific Conference on Production Engineering Development and Modernization of Production on, 2013, pp. 1-5.
- E. Mujcic, and **A. Osmanovic**, "TCP and UDP for Real-Time Control," in 8th International Scientific Conference on Production Engineering Development and Modernization of Production on, 2011, pp. 1-5.
- **A. Oračević**, and E. Mujcic, "Upotreba talasnog prediktora kod bilateralnih teleoperatora sa talasnim varijablama," in 8th International Scientific Conference on Production Engineering Development and Modernization of Production on, 2011, pp. 1-5.
- **A. Oračević**, and S. Ozdemir, "A Survey of Security Threats in Wireless Sensor Networks," in 10th International Scientific Conference on Production Engineering.

RESEARCH PROJECTS

- **Digital Broadcasting and Broadband Technologies (DBBT):** Teacher/trainer/researcher. Supported by ERASMUS. University of Bihac
Based on the fact that there is a lack of experts in the area of information and communication technologies (ICT) in the Western Balkan countries, especially in broadcast and broadband technologies, education of specialists (experts) need to be involved in the process of transfer of analogue to digital broadcasting, maintenance of digital systems and introducing of new broadcasting and broadband technologies. Implementation of the modern master study that enable education of the specialists in the field of Digital Broadcasting and Broadband Technology is necessary.
- **Development of a Sensor Network and Camera Based Hybrid Critical Area Surveillance System,** Researcher, supported by HAVELSAN A.Ş. and Ministry of Science, Industry and Technology, 0211.STZ.2013-1. Gazi University Ankara
In this project, a reliable hybrid critical area surveillance system that will mitigate the shortcomings of the camera based and sensor network based surveillance systems will be developed. The proposed system will be composed of two major subsystems. The first subsystem is wireless sensor network that is deployed to the area to be monitored and the second subsystem is the video camera subsystem that can move its cameras based on the information received from the wireless sensor network. The proposed hybrid system's main tasks can be listed as (i) target detection, (ii) target identification and (iii) target tracking. Target detection task is performed by the wireless sensor network. The location information of the detected target is forwarded to the camera subsystem. Then, the camera subsystem positions one of the cameras to the target and identifies the target. If the identified target something that needs to be tracked, the target will be tracked by both the camera subsystem and the wireless sensor network. The novel aspect of the proposed project is as follows: if the camera subsystem loses the target during the tracking, the wireless sensor network will provide necessary location information of the target so that camera can be re-positioned for target tracking.

PROFESSIONAL SERVICE

- **Reviewer for Journals:** International Journal of Distributed Sensor Networks, IEEE Transactions on Communications, International Journal of Communication Systems.
- **BalkanCom 2018 TPC**
- **RIM 2017 TPC**
- **RIM 2015 TPC**

LANGUAGE COMPETENCE

- **Bosnian:** Native or bilingual proficiency
- **English:** Full professional proficiency
- **Croatian:** Native or bilingual proficiency
- **French:** Elementary proficiency, but due to 4 years of learning French, I would be able to achieve full professional proficiency for 3 to 6 months after coming to the French language speaking area.
- **Turkish:** Elementary proficiency

REFEREES

- **Dr. Ian Akyildiz** email: ian@ece.gatech.edu
- **Dr. Suat Ozdemir** email: suatozdemir@gazi.edu.tr
- **Dr. Sead Berberovic** email: Sead.Berberovic@fer.hr