MOHAMMED SALEH ALI MUTHANNA

PhD Computer Engineering

europass

PERSONAL INFORAMTION

Date of birth: January 01, 1987
Nationality: Yemeni
Marital status: Single

Russia, saint-petersburg, European street no18
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+ 79522764468

LINKS

Google scholar:
https://scholar.google.ca/citations?user=g5iB_DcAAAAJ&hl=en
Scopus Author ID:
https://www.scopus.com/authid/detail.uri?authorId=57194240421

RESEARCH INTEREST

Resource management in WSN.
Optimization theory.
Machine learning.
Deep learning.
Network slicing.

REFERENCE

Prof. Mohammad Hammoudeh, Manchester Metropolitan University, UK,
Phone: +44 (0)161 247 2845
Email: m.hammoudeh@mmu.ac.uk

Prof. Min Wei, Chongqing University of Posts and Telecommunications, China
Phone: +8613452333003
Email: weimin@cqupt.edu.cn

Prof. Ahmed A. Abd El-Latif, *Menoufia University*, Egypt
Phone: +201116311972
Email: *a.rahiem@gmail.com*

COMPUTER SKILLS

Programming:
MATLAB,NS3, Python , C/C++, C#, HTML, CSS.

Simulation Tools
NI Multisim / PROTEUS / Agilents ADS / Verilog VHDL (Familiar with ModelSim GHDL Altera Quartus Xilinx ISE)

Editing Tools
Microsoft Office / LaTeX / Photoshop

EDUCATION

PHD Chongqing University of Posts and Telecommunications
2017 - 2021 Computer Science and Technology, Level in EQF : EQF level 8
Address: Chongqing (China)
- Wireless communications networks.
- Machine learning.
- Deep learning.
- Network slicing.

MSC Saint-Petersburg Electrotechnical University,
2014 - 2016 Computer Science and Technology, Level in EQF : EQF level 7
Address: Saint-Petersburg (Russia).
- Wireless communications networks; Machine learning; Deep learning; Network slicing.

BSc Volgograd State Technical University,
2009 - 2013 Computer: Level in EQF : EQF level 6
Address: Volgograd (Russia)
- Machine learning; Mobile Communications.

HONORS AND AWARD

2021 Graduated with honors from Chongqing University of Posts and Telecommunications (according to number of publication)
2017 Received Ph.D. offer in Computer Science Department, Chongqing University of Posts and Telecommunications.
2016 Graduated with honors from Saint-Petersburg Electrotechnical University (according to number of publication)
2016 Received recognition award for exceptional thesis, 1st rank , Saint-Petersburg Electrotechnical University.
2014 Winner of master fellowship of Saint-Petersburg Electrotechnical University
2011 Ranked 5th in the National Olympia of Programming
2010 Member of exceptional talent in Volgograd State University
2008 Winners of B.Sc. scholarship of Computer Science Department, Volgograd State University
2006 Ranked in the Top 500 in the Olympia of Math for high school students

COMMUNICATION AND INTERPERSONAL SKILLS

- Good communication skills gained through team work, managerial work and academic discussions and seminars.
- Excellent contact skills with people from different ages and background gained through my social and teaching tasks during my mandatory service.

ORGANISATIONAL SKILLS

- Worked as senior commander and supervisor for an entire district recruits enriched me with good leadership skills.
- Good team working skills gained through my stretched work experience.
- Project planning.
- Project Management.

Additional SKILLS

- Wireless Network Protocols
- Wireless Sensor Networks, Contiki-OS
- IoT devices (LoRa, zigBee,)

LANGUAGE SKILLS

- Arabic: Native
- English:
- LISTENING: C2 READING: C2 WRITING: C2
- SPOKEN PRODUCTION: C1
- SPOKEN INTERACTION: C1
- Russian: LISTENING: C2 READING: C2 WRITING: C2
- SPOKEN PRODUCTION: C1
- SPOKEN INTERACTION: C1
- Chinese: LISTENING: A2 READING: A2 WRITING: A2
- SPOKEN PRODUCTION: A2 SPOKEN INTERACTION: A2

INTERNSHIP

- Engineer-developer at The SDN Laboratory at The BonchBruevich Saint Petersburg State University of Telecommunication(Bonch-Bruevich Saint-Petersburg State University of Telecomminication) and
- 2016 Hackaton winner “HackRussia2016”

INDUSTRIAL EXPERIENCE

March 2021- Present Senior Research Scientist at the Institute of Computer Technology and Information Security, Southern Federal University, Russia

Sep 2017 – Jul 2021 Chongqing University of Posts and Telecommunications, Chongqing, China ***Position:*** Research Associate Main responsibilities:

Conduct research work related to IoT, MEC, SDN, WSN
Conduct literature reviews / Collect and analyze data
Prepare articles, reports, journal papers and presentations

Jul 2015 – May 2017 MTS Company, Saint-Petersburg, Russia, ***Position:*** IT Support Engineer. Main responsibilities:

- Network infrastructure configuration management.
- Designing WI-FI networks.
- Cyber security.

Oct 2013 – Apr 2014 MTS Company, Aden, Yemen ***Position:*** Technical Support Engineer. Main responsibilities:

- Maintaining computer systems.
- Configuration and installation of various computer software.
- Performing software optimization tasks.

REVIEWER

- **Journals**:

Composite Structures; Information Sciences; Technology; Alexandria Engineering Journal; Security and Communication Networks and Applied Sciences.

- **Conferences:**

Distributed Computer and Communication Networks; Internet of Things, Smart Spaces, and Next Generation Networks and Systems (NEW2AN); International Congress on Ultra-Modern Telecommunications and Control Systems and Workshops (ICUMT).

SELECTED PUBLICATIONS

Journal Papers:

1. **M. S. A. Muthanna**, R. Alkanhel, A. Muthanna, A. Rafiq and W. A. M. Abdullah, "Towards SDN-Enabled, Intelligent Intrusion Detection System for Internet of Things (IoT)," in *IEEE Access*, vol. 10, pp. 22756-22768, 2022, doi: 10.1109/ACCESS.2022.3153716.
2. M. A. Razib, D. Javeed, M. T. Khan, R. Alkanhel and **M. S. A. Muthanna**, "Cyber Threats Detection in Smart Environments using SDN-enabled DNN-LSTM Hybrid Framework," in IEEE Access, doi: 10.1109/ACCESS.2022.3172304.
3. **Mohammed Saleh Ali Muthanna,** Ammar Muthanna, Tu N. Nguyen, Abdullah Alshahrani, Ahmed A. Abd El-Latif (2022). Towards optimal positioning and energy-efficient UAV path scheduling in IoT applications. Computer Communications, 0140-3664. https://doi.org/10.1016/j.comcom.2022.04.029.
4. **Muthanna, M. S. A.,** Muthanna, A., Rafiq, A., Hammoudeh, M., Alkanhel, R., Lynch, S., & Abd El-Latif, A. A. (2022). Deep reinforcement learning based transmission policy enforcement and multi-hop routing in QoS aware LoRa IoT networks. Computer Communications, 183, 33-50. https://doi.org/10.1016/j.comcom.2021.11.010

SELECTED PUBLICATIONS

5. A. Rafiq, W. Ping, W. Min and **M. S. A. Muthanna**, "Fog Assisted 6TiSCH Tri-Layer Network Architecture for Adaptive Scheduling and Energy-Efficient Offloading Using Rank-Based Q-learning in Smart Industries," in IEEE Sensors Journal, https://doi:10.1109/JSEN.2021.3058976
6. **Muthanna M.S.A**, Ping Wang, Min Wei, Abdelrahman Abuarqoub, Ahmad Alzu'bi, Hina Gull (2021) Cognitive control models of multiple access IoT networks using LoRa technology Cognitive Systems Research,Pages 62-73,ISSN 1389-0417, https://doi.org/10.1016/j.cogsys.2020.09.002
7. Al-gaashani, M.S.A.M., Shang, F., **Muthanna, M.S.A.**, Khayyat, M., Abd El-Latif, A.A.: Tomato leaf disease classification by exploiting transfer learning and feature concatenation. *IET Image Process.* 1–13 (2021) https://doi.org/10.1049/ipr2.12397
8. NTEZIRIZA NKERABAHIZI, W. Ping, W. Min, **M. S. A. Muthanna**, and A. Rafiq, "A Framework for Managing Dynamic Routing in Industrial Networks Driven by Software-Defined Networking Technology" in IEEE Access Journal, DOI:10.1109/ACCESS.2021.3079896
9. **Muthanna, M.S.A.**; Wang, P.; Wei, M.; Rafiq, A.; Josbert, N.N. Clustering Optimization of LoRa Networks for Perturbed Ultra-Dense IoT Networks. Information 2021, 12, 76. https://doi.org/10.3390/info12020076
10. Amir Chaaf, **Muthanna M.S.A**, Ammar Muthanna, Soha Alhelaly, "Energy-Efficient Relay-Based Void Hole Prevention and Repair in Clustered Multi-AUV Underwater Wireless Sensor Network". *Security and Communication Networks. https://doi.org/10.1155/2021/9969605*
11. Aboulola, O.; Khayyat, M.; Al-Harbi, B.; **Muthanna, M.S.A.**; Muthanna, A.; Fasihuddin, H.; Alsulami, M.H. Multimodal Feature-Assisted Continuous Driver Behavior Analysis and Solving for Edge-Enabled Internet of Connected Vehicles Using Deep Learning. *Appl. Sci.* **2021**, *11*, 10462. https://doi.org/10.3390/app112110462

1. Refereed Conference Papers:

2. Sharofidinov F., **Muthanna M.S.A**., Pham V.D., Khakimov A., Muthanna A., Samouylov K. (2020) Agriculture Management Based on LoRa Edge Computing System. In: Vishnevskiy V.M., Samouylov K.E., Kozyrev D.V. (eds) Distributed Computer and Communication Networks. DCCN 2020. Lecture Notes in Computer Science, vol 12563. Springer, Cham. https://doi.org/10.1007/978-3-030-66471-8_10
3. **Muthanna M.S.A**., Wang P., Wei M., Al-mughalles W., Rafiq A. (2020) Dynamic Programming Method for Traffic Distribution in LoRaWAN Network. In: Galinina O., Andreev S., Balandin S., Koucheryavy Y. (eds) Internet of Things, Smart Spaces, and Next Generation Networks and Systems. NEW2AN 2020, ruSMART 2020. Lecture Notes in Computer Science, vol 12525. Springer, Cham. https://doi.org/10.1007/978-3-030-65726-0_28
4. Khakimov A., **Muthanna M.S.A**., Mikhail P., Ibodullokhodzha I., Muthanna A., Samouylov K. (2020) Energy-Aware Algorithm for LoRa Technology: Prototype Implementation. In: Galinina O., Andreev S., Balandin S., Koucheryavy Y. (eds) Internet of Things, Smart Spaces, and Next Generation Networks and Systems. NEW2AN 2020, ruSMART 2020. Lecture Notes in Computer Science, vol 12525. Springer, Cham. http://doi-org-443.webvpn.fjmu.edu.cn/10.1007/978-3-030-65726-0_2
5. M. Al-gaashani, **M. S. Ali Muthanna**, K. Abdukodir, A. Muthanna and R. Kirichek, "Intelligent System Architecture for Smart City and its Applications Based Edge Computing," *2020 12th International Congress on Ultra Modern Telecommunications and Control Systems and Workshops (ICUMT)*, Brno, Czech Republic, 2020, pp. 269-274, doi: 10.1109/ICUMT51630.2020.9222460
6. **M. S. Ali Muthanna**, Y. T. Lyachek, A. M. Obadi Musaeed, Y. Ahmed Hazzaa Esmail and A. B. M. Adam, "Smart System of a Real-Time Pedestrian Detection for Smart City," *2020 IEEE Conference of Russian Young Researchers in Electrical and Electronic Engineering (EIConRus)*, St. Petersburg and Moscow, Russia, 2020, pp. 45-50, doi: 10.1109/EIConRus49466.2020.9039333.
7. **M. S. Ali Muthanna**, A. Mohammed Obadi Musaeed, A. Muthanna, M. Filimonova and Y. A. Hazzaa Esmail, "Analysis of the Advantages of Millimeter Waves for Video Traffic Transmission in 5G Networks," *2020 IEEE Conference of Russian Young Researchers in Electrical and Electronic Engineering (EIConRus)*, St. Petersburg and Moscow, Russia, 2020, pp. 51-53, doi: 10.1109/EIConRus49466.2020.9039307.
8. **Muthanna M.S.A.**, Wang P., Wei M., Ateya A.A., Muthanna A. (2019) Toward an Ultra-low Latency and Energy Efficient LoRaWAN. In: Galinina O., Andreev S., Balandin S., Koucheryavy Y. (eds) Internet of Things,

Smart Spaces, and Next Generation Networks and Systems. NEW2AN 2019, ruSMART 2019. Lecture Notes in Computer Science, vol 11660. Springer, Cham. https://doi.org/10.1007/978-3-030-30859-9_20

9. **M. S. A. Muthanna**, *U. T. lyachek, S. S. S. Nasser, A. Muthanna and M. M. A. Muthanna, "Study of Resource Allocation Methods for Smart City Systems,"* 2019 XXII International Conference on Soft Computing and Measurements (SCM)), *St. Petersburg, Russia, 2019, pp. 129-132,* doi: 10.1109/SCM.2019.8903904.
10. *A. Muthanna,* **M. S. Ali Muthanna**, *K. Abdukodir, A. A. Ateya and M. Al-Bahri, "Delay Tolerant Network model based on D2D communication,"* 2019 4th MEC International Conference on Big Data and Smart City (ICBDSC), *Muscat, Oman, 2019, pp. 1-5,* doi: 10.1109/ICBDSC.2019.8645609.
11. *A. Khakimov, A. Muthanna and* **M. S. A. Muthanna**, *"Study of fog computing structure,"* 2018 IEEE Conference of Russian Young Researchers in Electrical and Electronic Engineering (EIConRus), *Moscow, 2018, pp. 51-54,* doi: 10.1109/EIConRus.2018.8317028.
12. **M. S. A. Muthanna**, *M. M. A. Muthanna, A. Khakimov and A. Muthanna, "Development of intelligent street lighting services model based on LoRa technology,"* 2018 IEEE Conference of Russian Young Researchers in Electrical and Electronic Engineering (EIConRus), *Moscow, 2018, pp. 90-93,* doi: 10.1109/EIConRus.2018.8317037.
13. *A. Khakimov, A. Muthanna, R. Kirichek, A. Koucheryavy and* **M. S. A. Muthanna**, *"Investigation of methods for remote control IoT-devices based on cloud platforms and different interaction protocols,"* 2017 IEEE Conference of Russian Young Researchers in Electrical and Electronic Engineering (EIConRus), *St. Petersburg, 2017, pp. 160-163,* doi: 10.1109/EIConRus.2017.7910518.
14. *A. Muthanna, R. Gimadinov, R. Kirichek, A. Koucheryavy and* **M. S. A. Muthanna**, *"Software development for the centralized management of IoT-devices in the "smart home" systems,"* 2017 IEEE Conference of Russian Young Researchers in Electrical and Electronic Engineering (EIConRus), *St. Petersburg, 2017, pp. 190-194,* doi: 10.1109/EIConRus.2017.7910526.