

Active-passive two-way ranging using UWB

Laadung, Taavi; Ulp, Sander; Alam, Muhammad Mahtab; Le Moullec, Yannick 2020, 14th International Conference on Signal Processing and Communication Systems, (ICSPCS) December 14-16, 2020 – Virtual Conference : proceedings 2020 <https://doi.org/10.1109/ICSPCS50536.2020.9309999>

Adaptive Extended Kalman Filter position estimation based on Ultra-Wideband Active-Passive Ranging Protocol

Laadung, Taavi; Ulp, Sander; Fjodorov, Aleksei; Alam, Muhammad Mahtab; Le Moullec, Yannick IEEE Access 2023 / p. 92575-92588 <https://doi.org/10.1109/ACCESS.2023.3308696>

Aerial base station assisted cellular communication : performance and trade-off

Sharma, Navuday; Kumar, Atul; Alam, Muhammad Mahtab; Jindal, Anish; Imran, Muhammad Ali IEEE Transactions on Network Science and Engineering 2021 / p. 2765-2779 <https://doi.org/10.1109/TNSE.2021.3052984> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Analyzing and investigating encrypted traffic for social media application Instagram

Iqbal, Hameed; Ahmad, Rizwan; Ahmed, Waqas; Qazi, Shams; Alam, Muhammad Mahtab 2022 18th Biennial Baltic Electronics Conference (BEC) 2022 / 6 p. : ill <https://doi.org/10.1109/BEC56180.2022.9935603>

Applying RIS-based communication for collaborative computing in a swarm of drones

Rahbari, Dadmehr; Alam, Muhammad Mahtab; Le Moullec, Yannick; Jenihhin, Maksim IEEE Access 2023 / p. 70093-70109 <https://doi.org/10.1109/ACCESS.2023.3293737>

Automatic NLOS classification from virtual 3D city models

Müürsepp, Ivo; Alam, Muhammad Mahtab 2023 Eighth International Conference on Fog and Mobile Edge Computing (FMEC) 2023 / p. 190-195 <https://doi.org/10.1109/FMEC59375.2023.10306158>

Body-to-Body communication : applications, system design aspects and performance evaluation

Khan, Rida; Alam, Muhammad Mahtab The 12th International Symposium on Medical Information and Communication Technology : ISMICT 2018, 26-28 March 2018, University of Technology Sydney 2018 / 2 p. : ill <http://ismict2018.org/images/Docs-2017/ISMICT-2018-Program---Final.pdf> <http://dx.doi.org/10.1109/ISMICT.2018.8573721>

Cell coverage analysis of a low altitude aerial base station in wind perturbations

Sharma, Navuday; Sharma, Vishal; Magarini, Maurizio; Pervaiz, Haris; Alam, Muhammad Mahtab; Le Moullec, Yannick 2019 IEEE Globecom Workshops (GC Wkshps) : Proceedings 2019 / 6 p <https://doi.org/10.1109/GCWkshps45667.2019.9024665>

Channel characterization at 2.4 GHz for aerial base station

Sharma, Navuday; Magarini, Maurizio; Reggiani, Luca; Alam, Muhammad Mahtab Procedia computer science 2019 / p. 1092-1099 <https://doi.org/10.1016/j.procs.2019.04.155> [Conference proceeding at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Channel prediction based enhanced throughput and channel aware MAC in SmartBAN standard

Khan, Rida; Alam, Muhammad Mahtab; Kuusik, Alar 2019 16th International Symposium on Wireless Communication Systems (ISWCS) 2019 / p. 463-468 : ill <https://doi.org/10.1109/ISWCS.2019.8877244>

Communication challenges in on-body and body-to-body wearable wireless networks - a connectivity perspective

Ben Arbia, Dhafer; Alam, Muhammad Mahtab; Le Moullec, Yannick; Hamida, Elyes Ben Technologies 2017 / art. 43, p.1-18 : ill <http://dx.doi.org/10.3390/technologies5030043>

A configurable radio jamming prototype for physical layer attacks against malicious unmanned aerial vehicles

Caforio, Giulio; Scazzoli, Davide; Reggiani, Luca; Magarini, Maurizio; Le Moullec, Yannick; Alam, Muhammad Mahtab 2020 17th Biennial Baltic electronics conference, Tallinn, Estonia, October 6-8, 2020 : proceedings 2020 / 6 p. : ill <https://doi.org/10.1109/BEC49624.2020.9277253>

Cooperative interference avoidance scheduler for radio resource management in NB-IoT systems

Mwakwata, Collins Burton; Alam, Muhammad Mahtab; Le Moullec, Yannick; Malik, Hassan; Päränd, Sven EuCNC 2020: 2020 European Conference on Networks and Communications (EuCNC), Dubrovnik, Croatia, Croatia, 15-18 June 2020 : proceedings 2020 / p. 154-159 <https://doi.org/10.1109/EuCNC48522.2020.9200967>

Cooperative scheduler to enhance massive connectivity in 5G and beyond by minimizing interference in OMA and NOMA

Mwakwata, Collins Burton; Elgarhy, Osama Mohamed Mostafa; Alam, Muhammad Mahtab; Le Moullec, Yannick; Päränd, Sven; Trichias, Konstantinos; Ramantas, Kostas IEEE Systems Journal 2022 / p. 5044-5055 <https://doi.org/10.1109/JSYST.2021.3114338> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

CROW2 : Internet of humans-based platform for disaster relief and emergency communication

Ben Arbia, Dhafer; Alam, Muhammad Mahtab; Attia, Rabah; Ben Hamida, Elyes; Kadri, Abdullah 14th IEEE Annual Consumer Communications & Networking Conference, CCNC 2017 : Las Vegas, NV, USA, January 8-11, 2017 2017 / p. 578-579 : ill <https://doi.org/10.1109/CCNC.2017.7983174>

A deep learning approach for LoS/NLoS identification via PRACH in UAV-assisted public safety networks

Scazzoli, Davide; Magarini, Maurizio; Reggiani, Luca; **Le Moullec, Yannick; Alam, Muhammad Mahtab** 2020 IEEE 31st Annual International Symposium on Personal, Indoor and Mobile Radio Communications, August 31 - September 3, 2020 in London, United Kingdom : proceedings 2020 / 6 p <https://doi.org/10.1109/PIMRC48278.2020.9217127>

Device-to-device discovery and localization assisted by UAVs in pervasive public safety networks

Masood, Ali; Sharma, Navuday; Alam, Muhammad Mahtab; Le Moullec, Yannick; Scazzoli, Davide; Magarini, Maurizio; Ahmad, Rizwan Proceedings of the ACM MobiHoc workshop on innovative aerial communication solutions for First REsponders network in emergency scenarios : iFIRE '19, Catania, Italy, July 2-5, 2019 2019 / p. 6-11 <https://doi.org/10.1145/3331053.3335031>

Direct discovery-based cooperative device-to-device communication for emergency scenarios in 6G

Masood, Ali; Alam, Muhammad Mahtab; Le Moullec, Yannick 2022 Joint European Conference on Networks and Communications & 6G Summit (EuCNC/6G Summit) : proceedings 2022 / p. 297-302 : ill <https://doi.org/10.1109/EuCNC/6GSummit54941.2022.9815706>

DORM : narrowband IoT development platform and indoor deployment coverage analysis

Khan, Sikandar Muhammad Zulqarnain; Malik, Hassan; Sarmiento, Jeffrey Leonel Redondo; Alam, Muhammad Mahtab; Le Moullec, Yannick Procedia computer science 2019 / p. 1084-1091 : ill <https://doi.org/10.1016/j.procs.2019.04.154> [Conference proceeding at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Dynamic radio frame configuration by exploiting uplink control channel for URLLC

Sharma, Navuday; Alam, Muhammad Mahtab; Le Moullec, Yannick; Malik, Hassan; Bennis, Mehdi; **Päränd, Sven** 2019 IEEE Wireless Communications and Networking Conference Workshop (WCNCW) 2019 / 6 p. : ill <https://doi.org/10.1109/WCNCW.2019.8902898>

Dynamic slot allocation using non overlapping backoff algorithm in IEEE 802.15.6 WBAN

Saboor, Abdul; Ahmad, Rizwan; Ahmed, Waqas; Kiani, Adnan Khalid; **Alam, Muhammad Mahtab; Kuusik, Alar; Le Moullec, Yannick** IEEE sensors journal 2020 / p. 10862-10875 : ill <https://doi.org/10.1109/JSEN.2020.2993795> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Edge-to-Fog collaborative computing in a swarm of drones

Rahbari, Dadmehr; Alam, Muhammad Mahtab; Le Moullec, Yannick; Jenihhin, Maksim Advances in Model and Data Engineering in the Digitalization Era : MEDI 2021 International Workshops: DETECT, SIAS, CSMML, BIOC, HEDA, Tallinn, Estonia, June 21-23, 2021 : proceedings 2021 / p. 78-87 https://doi.org/10.1007/978-3-030-87657-9_6 [Conference Proceedings at Scopus](#) [Article at Scopus](#)

An empirical modeling for the baseline energy consumption of an NB-IoT radio transceiver

Khan, Sikandar Muhammad Zulqarnain; Alam, Muhammad Mahtab; Le Moullec, Yannick; Kuusik, Alar; Päränd, Sven; Verikoukis, Christos IEEE Internet of Things Journal 2021 / p. 14756-14772 : ill <https://doi.org/10.1109/JIOT.2021.3072769> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Energy consumption evaluation of OMA vs. NOMA for sustainable scheduling in 6G O-RAN

Latif, Aamir; Alam, Muhammad Mahtab; Elgarhy, Osama Mohamed Mostafa; Le Moullec, Yannick International Wireless Communications and Mobile Computing Conference, IWCMC 2024

Energy efficiency and latency optimization for IoT URLLC and mMTC use cases

Elgarhy, Osama Mohamed Mostafa; Reggiani, Luca; **Alam, Muhammad Mahtab;** Zoha, Ahmed; Ahmad, Rizwan; **Kuusik, Alar** IEEE Access / p. 23132-23148 <https://doi.org/10.1109/ACCESS.2024.3364349>

Energy efficiency evaluation of linear transmitters for 5G NR wireless waveforms

Biyabani, Sara R.; **Khan, Rida; Alam, Muhammad Mahtab;** Biyabani, A. Ahmed; McCune, Earl IEEE transactions on green communications and networking 2019 / p. 446 - 454 : ill <https://doi.org/10.1109/TGCN.2019.2902179> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Energy efficiency for bisection based power allocation with proportional fairness in relay-assisted LTE-A downlink system [Online resource]

Hassan, Hammad; Ahmed, Ifran; **Alam, Muhammad Mahtab** BEC 2018 : 2018 16th Biennial Baltic Electronics Conference (BEC) : proceedings of the 16th Biennial Baltic Electronics Conference, October 8-10, 2018 2018 / 4 p.: ill <https://doi.org/10.1109/BEC.2018.8600970>

Energy-efficient distributed leader selection algorithm for energy-constrained wireless sensor networks

Ulp, Sander; Le Moullec, Yannick; Alam, Muhammad Mahtab IEEE Access 2019 / p. 4410-4421 : ill <https://doi.org/10.1109/ACCESS.2018.2888551> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Enhanced decision mechanism for RAN subslicing in management closed control loop

Kulmar, Marika; Müürsepp, Ivo; Alam, Muhammad Mahtab 2023 Eighth International Conference on Fog and Mobile Edge

Enhanced IoT-based end-to-end emergency and disaster relief system

Ben Arbia, Dhafer; **Alam, Muhammad Mahtab**; Kadri, Abdullah; Ben Hamida, Elyes; Attia, Rabah Journal of sensor and actuator networks 2017 / art. 19, p. 1-18 : ill <http://dx.doi.org/10.3390/jsan6030019>

Estimating UWB positioning integrity based on ranging residuals

Tommingas, Mihkel; Ulp, Sander; Alam, Muhammad Mahtab; Mürsepp, Ivo; Laadung, Taavi 2023 24th International Conference on Applied Electromagnetics and Communications (ICECOM) 2023 / 5 p
<https://doi.org/10.1109/ICECOM58258.2023.10367954>

ETSI SmartBAN architecture: The global vision for smart body area networks

Hamalainen, Matti; Mucchi, Lorenzo; Girod-Genet, Marc; Paso, Tuomas; Farserotu, John; Tanaka, Hirokazu; Anzai, Daisuke; Pierucci, Laura; **Khan, Rida; Alam, Muhammad Mahtab** IEEE Access 2020 / art. 9167215, p. 150611-150625
<https://doi.org/10.1109/ACCESS.2020.3016705> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Evaluation of low power wide area network technologies for smart urban drainage systems

Malik, Hassan; Kändler, Nils; Alam, Muhammad Mahtab; Annus, Ivar; Le Moullec, Yannick; Kuusik, Alar 2018 IEEE : International Conference on Environmental Engineering, March 12-14, 2018 Milan Italy : conference proceedings 2018 / 5 p. : ill
<https://doi.org/10.1109/EE1.2018.8385262>

Evaluation of VoIP QoS performance in wireless mesh networks

Meeran, Mohammad Tariq; Annus, Paul; Alam, Muhammad Mahtab; Le Moullec, Yannick Information 2017 / art. 88, p. 1-26 : ill
<https://doi.org/10.3390/info8030088>

Experimental Characterization of Connectivity for ProSe Direct Discovery in Emergency Scenarios for 6G

Masood, Ali; Alam, Muhammad Mahtab; Moullec, Yannick Le 2023 IEEE Wireless Communications and Networking Conference (WCNC) 2023 / p. 1-6 <https://doi.org/10.1109/WCNC55385.2023.10118649>

Experimental characterization of ProSe direct discovery for emergency scenarios

Masood, Ali; Le Moullec, Yannick; Alam, Muhammad Mahtab 2021 IEEE 7th World Forum on Internet of Things (WF-IoT), 14 June 2021 - 31 July 2021, New Orleans, LA, USA : proceedings 2021 / p. 891-896 <https://doi.org/10.1109/WF-IoT51360.2021.9595305>

Fast and fair computation offloading management in a swarm of drones using a rating-based federated learning approach

Rahbari, Dadmehr; Alam, Muhammad Mahtab; Le Moullec, Yannick; Jenihhin, Maksim IEEE Access 2021 / p. 113832-113849
<https://doi.org/10.1109/ACCESS.2021.3104117> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

FedBranched : leveraging federated learning for anomaly-aware load forecasting in energy networks

Manzoor, Habib Ullah; Khan, Ahsan Raza; Flynn, David; **Alam, Muhammad Mahtab**; Akram, Muhammad; Imran, Muhammad Ali; Zoha, Ahmed Sensors 2023 / art. 3570 <https://doi.org/10.3390/s23073570>

5G as an enabler of connected-and-automated mobility in European cross-border corridors — a market assessment

Rizopoulos, Dimitrios; Laskari, Marina; Kouloumbis, Gerasimos; Fergadiotou, Ioanna; Durkin, Patrick; **Körbe Kaare, Kati; Alam, Muhammad Mahtab** Sustainability 2022 / art. 14411 <https://doi.org/10.3390/su142114411> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

5G testbed implementation and measurement campaign for ground and aerial coverage

Fjodorov, Aleksei; Masood, Ali; Alam, Muhammad Mahtab; Päränd, Sven 2022 18th Biennial Baltic Electronics Conference (BEC) 2022 / 6 p. <https://doi.org/10.1109/BEC56180.2022.9935602>

A flexible enhanced throughput and reduced overhead (FETRO) MAC protocol for ETSI SmartBAN

Khan, Rida; Alam, Muhammad Mahtab; Guizani, Mohsen IEEE Transactions on Mobile Computing 2022 / p. 2671-2686 : ill
<https://doi.org/10.1109/TMC.2020.3047596> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Heuristic radio access network subslicing with user clustering and bandwidth subpartitioning

Kulmar, Marika; Mürsepp, Ivo; Alam, Muhammad Mahtab Sensors 2023 / art. 4613 : ill <https://doi.org/10.3390/s23104613>

The Impact of RAN slice bandwidth subpartitioning on slice performance

Kulmar, Marika; Mürsepp, Ivo; Alam, Muhammad Mahtab 2022 International Wireless Communications and Mobile Computing (IWCMC) 2022 / p. 419-424 <https://doi.org/10.1109/IWCMC55113.2022.9825262>

Implementation and benchmarking of a novel routing protocol for tactical mobile ad-hoc networks

Ben Arbia, Dhafer; **Alam, Muhammad Mahtab**; Kadri, Abdullah; Attia, Rabah; Ben Hamida, Elyes 2016 IEEE 12th International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob) : 17-19 October 2016, New York, NY, USA 2016 / p. 118-125 : ill <https://doi.org/10.1109/WiMOB.2016.7763188>

Inertial and positioning sensors fusion for indirect location tracking in warehouse inventory management

Fjodorov, Aleksei; Ulp, Sander; **Alam, Muhammad Mahtab;** Kuusik, Alar 2023 International Conference on Control, Automation and Diagnosis (ICCAD) 2023 / p. 1-7 <https://doi.org/10.1109/ICCAD57653.2023.10152404>

Inter O-DUs coordination for scheduling of massive users in O-RAN

Latif, Aamir; **Alam, Muhammad Mahtab;** Le Moullec, Yannick 2023 Joint European Conference on Networks and Communications & 6G Summit (EuCNC/6G Summit) 2023 / p. 6 <https://doi.org/10.1109/EuCNC/6GSummit58263.2023.10188234>

Inter-cell interference reduction scheme for uplink transmission in NB-IoT Systems

Mwakwata, Collins Burton; Elgarhy, Osama Mohamed Mostafa; **Le Moullec, Yannick;** **Alam, Muhammad Mahtab;** Päränd, Sven; **Annus, Ivar** IWCMC 2021 Wireless Sensors & IoT: 2021 International Wireless Communications and Mobile Computing (IWCMC), Harbin, China, June 28 - July 2, 2021 2021 / p. 400-405 <https://doi.org/10.1109/IWCMC51323.2021.9498970>

Interference and priority aware coexistence (IPC) algorithm for link scheduling in IEEE 802.15.6 based WBANs

Khan, Fawad Nawaz; Ahmad, Rizwan; Ahmed, Waqas; **Alam, Muhammad Mahtab;** Driberg, Micheal IEEE Access 2019 / art. 8910561, p. 168736–168751 : ill [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Interference-aware radio resource allocation for 5G ultra-reliable low-latency communication

Malik, Hassan; **Alam, Muhammad Mahtab;** Le Moullec, Yannick; Ni, Qiang 2018 IEEE Globecom Workshops (GC Wkshps) : proceedings 2018 / p. <https://doi.org/10.1109/GLOCOMW.2018.8644301>

Internet of drones-enabled Smart Cities

Sharma, Navuday; Magarini, Maurizio; **Alam, Muhammad Mahtab** IoT Architectures, Models, and Platforms for Smart City Applications 2020 / p. 107-133 <https://doi.org/10.4018/978-1-7998-1253-1.ch006>

Jamming of UAV remote control systems using software defined radio

Päriln, Karel; **Alam, Muhammad Mahtab;** Le Moullec, Yannick 2018 International Conference on Military Communications and Information Systems (ICMCIS), 22-23 May 2018 : proceedings 2018 / p. 173-178 <http://dx.doi.org/10.1109/ICMCIS.2018.8398711>

Joint PHY-MAC realistic performance evaluation of body-to-body communication in IEEE 802.15.6 and SmartBAN

Khan, Rida; **Alam, Muhammad Mahtab** The 12th International Symposium on Medical Information and Communication Technology : ISMICT 2018, 26-28 March 2018, University of Technology Sydney 2018 / 6 p.: ill <http://ismict2018.org/images/Docs-2017/ISMICT-2018-Program---Final.pdf> <http://dx.doi.org/10.1109/ISMICT.2018.8573715>

Latest research trends in gait analysis using wearable sensors and machine learning: A systematic review

Saboor, Abdul; Kask, Triin; Kuusik, Alar; **Alam, Muhammad Mahtab;** Le Moullec, Yannick IEEE Access 2020 / art. 3022818, p. 167830–167864 <https://doi.org/10.1109/ACCESS.2020.3022818> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

A machine learning approach to achieving energy efficiency in relay-assisted LTE-a downlink system

Hassan, Hammad; Ahmed, Ifran; Ahmad, Rizwan; Khammari, Hedi; Bhatti, Ghulam; Ahmed, Waqas; **Alam, Muhammad Mahtab** Sensors 2019 / art. 3461, 25 p. : ill <https://doi.org/10.3390/s19163461> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Machine learning meets communication networks : current trends and future challenges

Ahmad, Ijaz; Shahabuddin, Shariar; Malik, Hassan; Leppänen, Teemu; Loven, Lauri; Anttonen, Antti; Sodhro, Ali Hassan; **Alam, Muhammad Mahtab;** Juntti, Markku; Ylä-Jääski, Antti IEEE Access 2020 / art. 9274307, p. 223418-223460 <https://doi.org/10.1109/ACCESS.2020.3041765> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Machine learning techniques for wireless-powered ambient backscatter communications : enabling intelligent iot networks in 6g era

Jameel, Furqan; **Sharma, Navuday;** Khan, Muhammad Awais; Khan, Imran; **Alam, Muhammad Mahtab;** Alam, Muhammad Mahtab; Mavromoustakis, Constandinos X. Internet of Things / 2020 https://doi.org/10.1007/978-3-030-44907-0_8 [Article collection metrics at Scopus](#) [Article at Scopus](#)

Management closed control loop automation for improved RAN slice performance by subslicing

Kulmar, Marika; **Alam, Muhammad Mahtab;** Mürsepp, Ivo techrxiv.org 2023 / 18 p. : ill <https://doi.org/10.36227/techrxiv.170290948.88447519/v1>

Managing critical nodes in UAV assisted disaster networks

Hassan, Ali; Ahmad, Rizwan; Ahmed, Waqas; Magarini, Maurizio; **Alam, Muhammad Mahtab** 2020 17th Biennial Baltic electronics conference, Tallinn, Estonia, October 6-8, 2020 : proceedings 2021 / 6 p. : ill <https://doi.org/10.1109/BEC49624.2020.9276993>

Matrix Profile based anomaly detection in streaming gait data for fall prevention

Gerazov, Branislav; Hadjieva, Elena; Krivošei, Andrei; Sanchez, Fiorella Ines Soto; Rostovski, Jakob; Kuusik, Alar; **Alam,**

Muhammad Mahtab 2023 30th International Conference on Systems, Signals and Image Processing (IWSSIP) 2023 / p. 1-5
<https://doi.org/10.1109/IWSSIP58668.2023.10180243>

Monitoring and control of smart urban drainage systems using NB-IoT cellular sensor networks

Roosipuu, Priit; Annus, Ivar; Kuusik, Alar; Kändler, Nils; Alam, Muhammad Mahtab Water science & technology Water science and technology 2023 / p. 339-354 <https://doi.org/10.2166/wst.2023.222>

A multi-armed bandit solver method for adaptive power allocation in device-to-device communication

Khan, Muhidul Islam; Alam, Muhammad Mahtab; Le Moullec, Yannick Procedia computer science 2018 / p. 1069-1076
<https://doi.org/10.1016/j.procs.2018.04.155> [Conference Proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Narrowband internet of things (NB-IoT) : from physical (PHY) and media access control (MAC) layers perspectives

Mwakwata, Collins Burton; Malik, Hassan; Alam, Muhammad Mahtab; Le Moullec, Yannick; Päränd, Sven; Mumtaz, Shahid Sensors 2019 / art. 2613, 34 p.: ill <https://doi.org/10.3390/s19112613> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Narrowband Internet of Things (NB-IoT) : from physical (PHY) and Media Access Control (MAC) layers perspectives : [an article in collection]

Mwakwata, Collins Burton; Malik, Hassan; Alam, Muhammad Mahtab; Le Moullec, Yannick; Päränd, Sven; Mumtaz, Shahid Internet of things and sensors networks in 5G wireless communications 2020 / p. 39-72 : ill <https://doi.org/10.3390/books978-3-03928-149-7> <https://doi.org/10.3390/s19112613>

Narrowband internet of things (NBIIoT) for industrial automation

Malik, Hassan; Alam, Muhammad Mahtab; Kuusik, Alar; Le Moullec, Yannick; Päränd, Sven Wireless automation as an enabler for the next industrial revolution 2020 / p. 65-87 <https://doi.org/10.1002/9781119552635.ch4>

NarrowBand-IoT performance analysis for healthcare applications

Malik, Hassan; Alam, Muhammad Mahtab; Le Moullec, Yannick; Kuusik, Alar Procedia computer science 2018 / p. 1077–1083
<https://doi.org/10.1016/j.procs.2018.04.156> [Conference Proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

An NB-IoT based edge-of-things framework for energy-efficient image transfer

Khan, Sikandar Muhammad Zulqarnain; Le Moullec, Yannick; Alam, Muhammad Mahtab Sensors 2021 / art. 5929, 21 p. : ill
<https://doi.org/10.3390/s21175929> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

NB-IoT based visual smart waste management system

Zulqarnain Khan, Sikandar; Hein, Haigo; Alam, Muhammad Mahtab; Le Moullec, Yannick; Päränd, Sven 2022 18th Biennial Baltic Electronics Conference (BEC) 2022 / 6 p. : ill <https://doi.org/10.1109/BEC56180.2022.9935601>

NB-IoT network field trial : indoor, outdoor and underground coverage campaign

Malik, Hassan; Khan, Sikandar Muhammad Zulqarnain; Sarmiento, Jeffrey Leonel Redondo; Kuusik, Alar; Alam, Muhammad Mahtab; Le Moullec, Yannick; Päränd, Sven IWCMC 2019 : 15th International Wireless Communications & Mobile Computing Conference (IWCMC), June 24–28, 2019, Tangier, Morocco 2019 / p. 537-542 : ill
<https://doi.org/10.1109/IWCMC.2019.8766568>

NB-IoT-võrgu uuring : katvus sise-, välis- ja maa-alustes tingimustes

Malik, Hassan; Khan, Sikandar Muhammad Zulqarnain; Sarimento, Jeffrey Leonel Redondo; Mwakwata, Collins Burton; Alam, Muhammad Mahtab; Le Menach, Yvonnick; Päränd, Sven Elektriala 2019 / lk. 14-18 : ill
http://www.ester.ee/record=b1240496*est

Network coding and hierarchical modulation for energy efficient cooperative WBAN

Waheed, Maham; Talha, Sadaf; Ahmad, Rizwan; Kiani, Adnan Khalid; Alam, Muhammad Mahtab; Ahmed, Waqas International journal of distributed systems and technologies 2019 / p. 90-111 <https://doi.org/10.4018/IJDST.2019070106> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Network coding for energy efficient transmission in Wireless Body Area Networks

Talha, Sadaf; Rizwan, Ahmad; Adnan, K. Kiani; Alam, Muhammad Mahtab Procedia computer science 2017 / p. 435-440 : ill
<https://doi.org/10.1016/j.procs.2017.08.285>

Novel active-passive two-way ranging protocols for UWB positioning systems

Laadung, Taavi; Ulp, Sander; Alam, Muhammad Mahtab; Le Moullec, Yannick IEEE sensors journal 2022 / p. 5223-5237 : ill
<https://doi.org/10.1109/JSEN.2021.3125570> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

A novel multi-hop body-to-body routing protocol for disaster and emergency networks

Ben Arbia, Dhafer; Alam, Muhammad Mahtab; Attia, Rabah; Ben Hamida, Elyes 2016 International Conference on Wireless Networks and Mobile Communications (WINCOM'2016) : October 26-29, 2016 Fez, Morocco 2016 / p. 1-7 : ill
<https://doi.org/10.1109/WINCOM.2016.7777222>

On coverage of critical nodes in UAV-assisted emergency networks

Waheed, Maham; Ahmad, Rizwan; Ahmed, Waqas; **Alam, Muhammad Mahtab**; Magarini, Maurizio Sensors 2023 / art. 1586 <https://doi.org/10.3390/s23031586>

On research challenges in hybrid medium-access control protocols for IEEE 802.15.6 WBANs

Saboor, Abdul; Ahmad, Rizwan; Ahmed, Waqas; Kiani, Adnan Khalid; **Moullec, Yannick Le; Alam, Muhammad Mahtab** IEEE Sensors Journal 2019 / p. 8543 - 8555 <https://doi.org/10.1109/JSEN.2018.2883786> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Performance analysis of interference and priority aware coexistence in IEEE 802.15.6 based WBANs

Khan, Fawad Nawaz; Ahmad, Rizwan; Ahmed, Waqas; **Alam, Muhammad Mahtab**; Drieber, Micheal 2020 17th Biennial Baltic electronics conference, Tallinn, Estonia, October 6-8, 2020 : proceedings 2020 / 5 p <https://doi.org/10.1109/BEC49624.2020.9277066>

Performance evaluation of 5G NR sidelink for V2X scenarios

Elgarhy, Osama Mohamed Mostafa; Yener, Onur; **Alam, Muhammad Mahtab** 2022 18th Biennial Baltic Electronics Conference (BEC) : proceedings 2022 / 5 p <https://doi.org/10.1109/BEC56180.2022.9935591>

Performance evaluation of 5G-NR positioning accuracy using time difference of arrival method

Müürsepp, Ivo; Kulmar, Marika; Elgarhy, Osama Mohamed Mostafa; Alam, Muhammad Mahtab; Chen, Tao; Horsmanheimo, Seppo; Scholliers, Johan 2021 IEEE International Mediterranean Conference on Communications and Networking (MeditCom) : Athens, Greece, 7-10 Sept. 2021 / p. 494-499 : ill <https://doi.org/10.1109/MeditCom49071.2021.9647652>

Performance evaluation of UWB active-passive two-way ranging distance estimation matrix weighting methods

Laadung, Taavi; Ulp, Sander; **Alam, Muhammad Mahtab; Le Moullec, Yannick** WiP Proceedings of the Twelfth International Conference on Indoor Positioning and Indoor Navigation 2022 / p. paper29 <https://ceur-ws.org/Vol-3248/paper29.pdf> [Conference proceedings at Scopus](#) [Article at Scopus](#)

Power aware ON/OFF switching schemes for energy efficient phantom cellular networks

Anjum, M Naveed; Ahmad, Rizwan; Hassan, Ali; Ahmed, Waqas; **Alam, Muhammad Mahtab** 2022 18th Biennial Baltic Electronics Conference (BEC) 2022 / 6 p <https://doi.org/10.1109/BEC56180.2022.9935605>

Predictive machine learning analysis for reliable D2D discovery in 6G critical communications

Masood, Ali; Alam, Muhammad Mahtab; Le Moullec, Yannick 2023 Eighth International Conference on Fog and Mobile Edge Computing (FMEC) 2023 / p. 58-63 <https://doi.org/10.1109/FMEC59375.2023.10306113>

Preface

Alam, Muhammad Mahtab; Hämäläinen, Matti; Mucchi, Lorenzo; Niazi, Imran Khan; **Le Moullec, Yannick** Body Area Networks. Smart IoT and Big Data for Intelligent Health : 15th EAI International Conference, BODYNETS 2020, Tallinn, Estonia, October 21, 2020 : proceedings 2020 / p. V <https://link.springer.com/content/pdf/bfm:978-3-030-64991-3/1?pdf=chapter%20toc> <https://doi.org/10.1007/978-3-030-64991-3> [Conference proceeding Article at Scopus](#)

A primer on public safety communication in the context of terror attacks: the NATO SPS “COUNTER-TERROR” project

Alam, Muhammad Mahtab; Le Moullec, Yannick; Ahmad, Rizwan; Magarini, Maurizio; Reggiani, Luca Advanced Technologies for Security Applications : Proceedings of the NATO Science for Peace and Security 'Cluster Workshop on Advanced Technologies', 17-18 September 2019, Leuven, Belgium 2020 / p. 19-34 https://doi.org/10.1007/978-94-024-2021-0_3 [Article collection metrics at Scopus](#) [Article at Scopus](#)

ProSe direct discovery : experimental characterization and context-aware heuristic approach to extend public safety networks lifetime

Masood, Ali; Alam, Muhammad Mahtab; Le Moullec, Yannick; Reggiani, Luca; Scizzoli, Davide; Magarini, Maurizio; Ahmad, Rizwan IEEE Access 2021 / p. 130055 –130071 <https://doi.org/10.1109/ACCESS.2021.3112751> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Q-Learning based joint energy-spectral efficiency optimization in multi-hop device-to-device communication

Khan, Muhidul Islam; Reggiani, Luca; **Alam, Muhammad Mahtab; Le Moullec, Yannick; Sharma, Navuday**; Yaacoub, Elias; Magarini, Maurizio Sensors 2020 / art. 6692, 23 p.: ill <https://doi.org/10.3390/s20226692> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Radio resource management in NB-IoT systems : empowered by interference prediction and flexible duplexing

Malik, Hassan; Alam, Muhammad Mahtab; Pervaiz, Haris; **Moullec, Yannick Le**; Al-Dulaimi, Anwer; Päränd, Sven; Reggiani, Luca IEEE Network 2020 / Art. nr. 8839971 <https://doi.org/10.1109/MNET.001.1900087> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Radio resource management scheme in NB-IoT systems

Malik, Hassan; Pervaiz, Haris; **Alam, Muhammad Mahtab; Le Moullec, Yannick; Kuusik, Alar**; Imran, Muhammad Ali IEEE Access 2018 / p. 15051-15064 : ill <https://doi.org/10.1109/ACCESS.2018.2812299> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

[metrics at WOS](#) [Article at WOS](#)

Rate-latency optimization for NB-IoT with adaptive resource unit configuration in uplink transmission

Elgarhy, Osama Mohamed Mostafa; Reggiani, Luca; Malik, Hassan; Alam, Muhammad Mahtab; Imran, Muhammad Ali IEEE Systems Journal 2021 / p. 265 - 276 <https://doi.org/10.1109/JSYST.2020.2991073> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Real-time gait anomaly detection using SVM time series classification

Rostovski, Jakob; Krivošei, Andrei; Kuusik, Alar; Alam, Muhammad Mahtab; Ahmadov, Ulvi 2023 International Wireless Communications and Mobile Computing (IWCMC) 2023 / p. 1389-1394 <https://doi.org/10.1109/IWCMC58020.2023.10182666>

A reinforcement learning routing protocol for UAV aided public safety networks

Minhas, Hassan Ishtiaq; Ahmad, Rizwan; Ahmed, Waqas; Waheed, Maham; Alam, Muhammad Mahtab; Gul, Sufi Tabassum Sensors 2021 / Art. nr. 4121 <https://doi.org/10.3390/s21124121> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Service placement and migration algorithm utilizing precise positioning for connected and automated vehicles

Elgarhy, Osama Mohamed Mostafa; Alam, Muhammad Mahtab; Reggiani, Luca; Azeem, Muhammad Moazam 2023 IEEE Conference on Standards for Communications and Networking (CSCN) 2023 / p. 183-188 <https://doi.org/10.1109/CSCN60443.2023.10453210>

SmartBAN performance evaluation for diverse applications

Khan, Rida; Alam, Muhammad Mahtab Body Area Networks : Smart IoT and Big Data for Intelligent Health Management. 14th EAI International Conference, BODYNETS 2019, Florence, Italy, October 2-3, 2019 : Proceedings 2019 / p. 239-251 https://doi.org/10.1007/978-3-030-34833-5_19 [Conference proceeding at Scopus](#) [Article at Scopus](#)

A survey on the roles of communication technologies in IoT-based personalized healthcare applications

Alam, Muhammad Mahtab; Malik, Hassan; Khan, Muhidul Islam; Pardy, Tamas; Kuusik, Alar; Le Moullec, Yannick IEEE Access 2018 / p. 36611-36631 : ill <https://doi.org/10.1109/ACCESS.2018.2853148> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Surveying pervasive public safety communication technologies in the context of terrorist attacks

Masood, Ali; Scazzoli, Davide; Sharma, Navuday; Le Moullec, Yannick; Ahmad, Rizwan; Reggiani, Luca; Magarini, Maurizio; Alam, Muhammad Mahtab Physical communication 2020 / art. 101109, <https://doi.org/10.1016/j.phycom.2020.101109> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Sustainable scheduling for ultra massive machine type communication using NOMA in 6G O-RAN

Latif, Aamir; Alam, Muhammad Mahtab; Elgarhy, Osama Mohamed Mostafa; Le Moullec, Yannick Digital Proceedings of the European Conference on Networks and Communications & 6G Summit 2024 (EuCNC 2024) 2024

Task classification for optimal offloading and resource allocation in vehicular edge computing

Mubashir, Memona; Ahmad, Rizwan; Saadat, Ahsan; Chaudhry, Saqib Rasool; Kiani, Adnan Khalid; Alam, Muhammad Mahtab 2023 Eighth International Conference on Fog and Mobile Edge Computing (FMEC) 2023 / p. 15-21 <https://doi.org/10.1109/FMEC59375.2023.10306155>

Throughput and channel aware MAC scheduling for SmartBAN standard

Khan, Rida; Alam, Muhammad Mahtab; Paso, Tuomas; Haapola, Jussi IEEE Access 2019 / p. 63133-63145 : ill <https://doi.org/10.1109/ACCESS.2019.2916159> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Throughput-aware cooperative reinforcement learning for adaptive resource allocation in device-to-device communication

Khan, Muhidul Islam; Alam, Muhammad Mahtab; Le Moullec, Yannick; Yaacoub, Elias Future Internet 2017 / art. 72, p. 1-17 : ill <https://doi.org/10.3390/fi9040072>

Towards efficient wireless body area network using two-way relay cooperation

Waheed, Maham; Ahmad, Rizwan; Alam, Muhammad Mahtab Sensors 2018 / art. 565, 23 p. : ill <https://doi.org/10.3390/s18020565> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

UAV and SWIPT assisted disaster aware clustering and association

Hassan, Ali; Ahmad, Rizwan; Ahmed, Waqas; Magarini, Maurizio; Alam, Muhammad Mahtab IEEE Access 2020 / p. 204791-204803 <https://doi.org/10.1109/ACCESS.2020.3035959> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

UAV trajectory planning for disaster scenarios

Javed, Sadaf; Hassan, Ali; Ahmad, Rizwan; Ahmed, Waqas; Alam, Muhammad Mahtab; Rodrigues, Joel J. P. C. Vehicular Communications 2023 / art. 100568, 12 p. : ill <https://doi.org/10.1016/j.vehcom.2022.100568>

A Unique backoff algorithm in IEEE 802.15.6 WBAN

Saboor, Abdul; Ahmad, Rizwan; Ahmed, Waqas; **Alam, Muhammad Mahtab** 2018 IEEE 88th Vehicular Technology Conference (VTC-Fall) :Chicago, IL, USA27 - 30 August 2018 : proceedings 2018 / 5 p. : ill <https://doi.org/10.1109/VTCFall.2018.8690812>
[Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

A unique backoff algorithm in IEEE 802.15.6 WBAN

Saboor, Abdul; Ahmad, Rizwan; Ahmed, Waqas; **Alam, Muhammad Mahtab** The 88th IEEE Vehicular Technology Conference : Final Programme, 27-30 August 2018, Chicago, USA 2018 / p. 48 <http://www.ieeevtc.org/vtc2018fall/final-program.pdf>

Validation of wired and wireless interconnected body sensor networks

Talpur, Anum; Shaikh, Faisal Karim; Baloch, Natasha; Felemban, Emad; Khelil, Abdelmajid; **Alam, Muhammad Mahtab** Sensors 2019 / art. 3697, 23 p. : ill <https://doi.org/10.3390/s19173697> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Wearable m-assessment system for neurological disease patients

Kuusik, Alar; Alam, Muhammad Mahtab; Kask, Triin; Gross-Paju, Katrin Proceedings : IEEE 4th World Forum on Internet of Things 2018 / p. 201-206 : ill <https://doi.org/10.1109/WF-IoT.2018.8355165>

Wearable wireless sensor networks for emergency response in public safety networks

Alam, Muhammad Mahtab; Ben Arbia, Dhafer; Ben Hamida, Elyes Wireless public safety networks 2 : a systematic approach 2016 / p. 63-94 : ill <https://doi.org/10.1016/B978-1-78548-052-2.50003-7>

Vision towards 5G : comparison of radio propagation models for licensed and unlicensed indoor femtocell sensor networks

Shabbir, Noman; Kütt, Lauri; Alam, Muhammad Mahtab; Roosipuu, Priit Physical communication 2021 / art. 101371 <https://doi.org/10.1016/j.phycom.2021.101371> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Värske veri TTÜs

Alam, Muhammad Mahtab; Kolde, Kristjan; Kuivjõgi, Kaja; Lung, Marti; Parnell, Kevin Ellis; Preis, Sergei Mente et Manu 2018 / lk. 47-49 : portr https://ttu.ee/public/m/mente-et-manu/MM_02_2018/mobile/index.html#p=6 http://www.ester.ee/record=b1242496*est
<http://dea.digar.ee/publication/AKmenteetmanu>