

Model F17 - Memoriul științific al studentului doctorand

MEMORIU ȘTIINȚIFIC Drd. Kanar Alaa Hussein Al-Sammak

Studii de doctorat

Perioada: 2021–2025

Conducător științific: Prof.dr.ing. Ion Marghescu

Domeniu: *Electronică, Telecomunicații și Tehnologia Informației*

Titlul tezei de doctorat: *ENERGY-EFFICIENT SMART METERING USING NB-IoT AND LoRawan: ADAPTIVE TRANSMISSION AND OPTIMIZED GATEWAY DEPLOYMENT STRATEGIES/ SOLUȚII DE CONTORIZARE INTELIGENTĂ FOLOSIND TEHNOLOGIILE NB-IoT ȘI LoRaWAN: TRANSMISIUNE ADAPTIVĂ ȘI STRATEGII PENTRU PLASAREA OPTIMĂ A STAȚIILOR DE BAZĂ (GATEWAY)*

Activitate științifică

A. Lista de lucrări științifice (articole în reviste sau volume)

1. Journal: K. A. Al-Sammak, S. H. Al-Gburi, I. Marghescu, A.-M. C. Drăgulescu, C. Marghescu, A. Martian, N. A. M. Alduais, N. A. H. Al-Sammak, Optimizing LoRaWAN Gateway Placement in Urban Environments: A Hybrid PSO-DE Algorithm Validated via HTZ Simulations, *Technologies*, 13(6), p.256, 17 June 2025, DOI: 10.3390/technologies13060256, ISI Q1 (2025), WOS:001514625000001.
2. Journal: K.A. Al-Sammak, S.H. Al-Gburi, I. Marghescu, A.-M.C. Drăgulescu, C. Marghescu, A. Martian, N.A.H. Al-Sammak, G. Suci, K.M.A. Alheeti, Optimizing IoT Energy Efficiency: Real-Time Adaptive Algorithms for Smart Metering with LoRaWAN and NB-IoT, *Energies*, 18(4), 987, 18 February 2025, DOI: 10.3390/en18040987, ISI Q3.
3. Journal: S.H. Al-Gburi, K.A. Al-Sammak, I. Marghescu, C.C. Oprea, A.-M.C. Drăgulescu, N.A.M. Alduais, K.M.A. Alheeti, N.A.H. Al-Sammak, EffRes-DrowsyNet: A Novel Hybrid Deep Learning Model Combining EfficientNetB0 and ResNet50 for Driver Drowsiness Detection, *Sensors*, 25, 3711, 13 June 2025, DOI:10.3390/s25123711, ISI Q2.
4. Journal: S.H. Al-Gburi, K.A. Al-Sammak, I. Marghescu, C.C. Oprea, A.-M.C. Drăgulescu, G. Suci, K.M.A. Alheeti, N.A.M. Alduais, N.A.H. Al-Sammak, Introducing a Novel Fast Neighbourhood Component Analysis–Deep Neural Network Model for Enhanced Driver Drowsiness Detection, *Big Data and Cognitive Computing*, 9(5), 126, 08 May 2025, DOI: 10.3390/bdcc9050126, ISI Q1.
5. Journal: S. H. Al-Gburi, K. A. Al-Sammak, I. Marghescu, C. C. Oprea, State of the Art in Drivers' Attention Monitoring – A Systematic Literature Review, *Karbala International Journal of Modern Science*, 9(1), Jan. 2023, DOI: 10.33640/2405-609x.3278, Scopus Q2.

B. Cărți și manuale

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C. Participări la conferințe/workshop-uri

1. Conference: K.A. Al-Sammak, S.H. Al-Gburi, N.A.H. Al-Sammak, G. Suci, An Evaluation of the Functionality of NB-IoT for Smart Metering Applications, *International Conference on Intelligent and*

Fuzzy Systems, Springer, Cham, pp.436–441, 29–31 July 2025, DOI: 10.1007/978-3-031-97992-7_49.

2. Conference: K.A. Al-Sammak, S.H. Al-Gburi, I. Marghescu, A.M. Drăgulescu, C. Marghescu, N.A.H. Al-Sammak, An Experimental Study of Power Consumption in Narrowband IoT Devices, COMM 2024, Bucharest, Romania, 03–04 October 2024, pp.1–6, IEEE, DOI: 10.1109/COMM62355.2024.10741514.
3. Conference: K.A. Al-Sammak, S.H. Al-Gburi, C. Marghescu, A.M. Drăgulescu, G. Suci, A.G. Abdulqader, A Comprehensive Assessment of LoRaWAN and NB-IoT Performance Metrics Under Varied Payload Data Sizes, ECAI 2024, Iași, Romania, 27–28 June 2024, pp.1–5, IEEE, DOI: 10.1109/ECAI61503.2024.10607481.
4. Conference: K.A. Al-Sammak, S.H. Al-Gburi, I. Marghescu, Communications Systems in Smart Metering: A Concise Systematic Literature Review, COMM 2022, Bucharest, Romania, 16–18 June 2022, pp.1–9, IEEE, DOI: 10.1109/COMM54429.2022.9817154.
5. Conference: S. H. Al-Gburi, K. A. Al-Sammak, N. A. A. Almosa, G. Suci, N. A. H. Al-Sammak, Comparative Analysis of Logistic Regression and SVM Models for Drowsiness Detection in Drivers, International Conference on Intelligent and Fuzzy Systems, Springer, Cham, pp.227–234, 29–31 July 2025, DOI:10.1007/978-3-031-98304-7_26.
6. Conference: S.H. Al-Gburi, K.A. Al-Sammak, I. Marghescu, C.C. Oprea, K.M.A. Alheeti, N.A.A. Almosa, Analyzing Different Models for Driver Behavior Detection Using EEG Data, COMM 2024, Bucharest, Romania, 03–04 October 2024, pp.1–5, IEEE, DOI: 10.1109/COMM62355.2024.10741402.
7. Conference: S.H. Al-Gburi, K.A. Al-Sammak, K.M.A. Alheeti, G. Suci, A.G. Abdulqader, Driver Behavior Assessment with Different ML Models Using EEG and Physiological Data – A Comparative Study, ECAI 2024, Iași, Romania, 27–28 June 2024, pp.1–6, IEEE, DOI: 10.1109/ECAI61503.2024.10607554.
8. Conference: G. Suci, C. Stalidi, K.A. Al-Sammak, S.H. Al-Gburi, M.-A. Sachian, Integrated Solution Based on Innovative Digital Technologies for Smart Ports, FOR-FREIGHT Project White Paper, BEIA Consult International, Bucharest, Romania, 2023.

D. Brevete

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E. Proiecte de cercetare științifică

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F. Stagii de perfecționare

1. International Summer School “Social Innovation”, UPB, 17–22 iulie 2023.

G. Cursuri de perfecționare

1. Cellular IoT Fundamentals, Nordic Semiconductor Academy, februarie 2024.
2. nRF Connect SDK Fundamentals, Nordic Semiconductor Academy, februarie 2024.

H. Membru în comitete de organizare sau comitete științifice ale conferințelor/colective de redacție ale unor reviste

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Student-doctorand
Kanan Alaa Hussein Al-Sammak

