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## Mohanad A. Al-Ibadi, PhD

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### Education

Degree Received	Area of Study	Institution	Date Received
Doctor of Philosophy	Electrical Engineering	University of Kansas, Kansas, USA	May 2019
Master of Science	Communications Engineering	University of Technology, Baghdad, Iraq	Feb 2009
Bachelor of Science	Electrical and Electronics Engineering	University of Technology, Baghdad, Iraq	June 2006

### Academic work experience

Position	From/To
Faculty member at Al-Furat Al-Awsat Technical University/ Engineering Technical College-Najaf.	June 2019 – present
Graduate Research Assistant at the University of Kansas (KU), KS, USA.	Jan 2014 – May 2019
Faculty member at the Foundation of Technical Education / Engineering Technical College-Najaf.	Dec 2009 – Dec 2013

### Selected Publications

1	Ruaa S.A. Anooz, Jafar Pourrostam, and <b>Mohanad Al-Ibadi</b> , “Adaptive Filters Versus Machine Learning Based Beam Tracking Techniques for Millimeter-Wave Wireless Communications Systems,” IEEE Access, Vol 12, Nov 2024.
2	Ruaa S.A. Anooz, Jafar Pourrostam, and <b>Mohanad Al-Ibadi</b> , “Performance Evaluation of 2D and 3D Beam and Channel Tracking Using Adaptive Filtering Techniques,” Iranian Journal of Science and Technology, Vol 48, April 2024.
3	<b>Mohanad Al-Ibadi</b> and Farhad Mahmood, “Beam and Channel Tracking for 5G Communication Systems Using Adaptive Filtering Techniques: A Comparison Study,” Journal of Communications Software and Systems, VOL. 18, NO. 3, Sep. 2022.
4	Zahraa Hammodi, Ahmed Alhilli, and <b>Mohanad Al-Ibadi</b> , “Energy Optimization via Optimal Placement of Cluster Heads in Wireless Sensor Networks with Obstacles,” 7th International Conference on Signal Processing and Communication (ICSC), 2021
5	Ahmed Alhilli, <b>Mohanad Al-Ibadi</b> , and others, “ <b>Optimal Path Finding in Stochastic Quasi-Dynamic Environments Using Particle Swarm Optimization</b> ,” Expert Systems with Applications (Elsevier), Vol. 186, 2021.
6	Zahraa Hammodi, Ahmed Alhilli, and <b>Mohanad Al-Ibadi</b> , “ <b>Optimal Placement of Single Cluster Head in Wireless Sensor Networks via Clustering</b> ,” 2021 IEEE Computing and Communication Workshop and Conference (CCWC), USA.
8	V. Berger, M. Xu, <b>Mohanad Al-Ibadi</b> , and others, “ <b>Automated Ice-Bottom Tracking of 2D and 3D Ice Radar Imagery Using Viterbi and TRW-S</b> ,” IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS), Vol. 12, Issue 9, Sep 2019.
9	J. Paden, V. Berger, <b>Mohanad Al-Ibadi</b> , and others, “ <b>Subglacial bed topography using machine learning and geostatistical analysis applied to 2D and 3D radar sounding</b> ,” American Geophysical Union (AGU), 2018 Fall meeting, Washington DC, USA.
10	<b>Mohanad Al-Ibadi</b> , and others, “ <b>Crossover analysis and automated layer-tracking assessment of the extracted DEM of the basal topography of the Canadian Arctic Archipelago ice-cap</b> ,” 2018 IEEE Radar Conference (RadarConf18), Oklahoma City, OK, USA.
11	S. Athinarapu, J. Paden, <b>Mohanad Al-Ibadi</b> , and T. Stumpf, “ <b>Model Order Estimators Using Optimal and Suboptimal Methods with Numerical Tuning</b> ,” 2018 IEEE Radar Conference (RadarConf18), Oklahoma City, OK, USA.
12	<b>Mohanad Al-Ibadi</b> , and others, “ <b>DEM EXTRACTION OF THE BASAL TOPOGRAPHY OF THE CANADIAN ARCTIC ARCHIPELAGO ICE CAPS VIA 2D AUTOMATED LAYER-TRACKER</b> ,” 2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 17), Fort Worth, TX, USA.
13	<b>Mohanad Al-Ibadi</b> and A. Dutta, “ <b>Predictive analytics for non-stationary V2I channel</b> ,” 2017 9th International Conference on Communication Systems and Networks (COMSNETS), Bengaluru, India.
14	J. Paden, M. Xu, J. Sprick, S. Athinarapu, <b>Mohanad Al-Ibadi</b> , and others, “ <b>3D Imaging and Automated Ice Bottom Tracking of Canadian Arctic Archipelago Ice Sounding Data</b> ,” American Geophysical Union (AGU), 2016 Fall Meeting, San Francisco, CA, USA.
15	<b>Mohanad Al-Ibadi</b> , and others, “ <b>DoA Estimation and Achievable Rate Analysis for 3D Massive MIMO in Aeronautical Communication Systems</b> ,” 2015 IEEE Global Conference on Signal and Information Processing (GlobalSIP), Orlando, FL, USA.

### Current research interests

- Application of machine learning techniques to solve array signal processing problems, such as wideband direction of arrival estimation and model order estimation.
- Application of model-based filtering techniques, such as Kalman filter, particle filter and sequential MAP/MMSE, for dynamic state-estimation problem in WSNs.
- Vehicular channel tracking.
- mmWave beamforming.

### Other skills and experiences

Mathematical stochastic modeling and optimization of real-world problems in radar and communications.

Real data analysis.

Simulators design for general wireless communications and radar environments.

Programming: MATLAB and Python.

General Microsoft Office programs, LaTeX, and several other standard computer programs.

### Languages

**Arabic:** Native

**English:** Fluent

**French & Spanish:** Basic

### Quick links

- My PhD dissertation: <https://kuscholarworks.ku.edu/handle/1808/29629>
- Google scholar: <https://scholar.google.com/citations?user=h6wS2uUAAAAJ&hl=en>
- LinkedIn: <https://www.linkedin.com/in/mohanad-alibadi>
- Researchgate: [https://www.researchgate.net/profile/Mohanad\\_Al-Ibadi](https://www.researchgate.net/profile/Mohanad_Al-Ibadi)
- Publons: <https://publons.com/researcher/3318373/mohanad-al-ibadi/>