Manhal Alhilali — Curriculum Vitae

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ORCID: https://orcid.org/0000-0001-7304-730X
Google Scholar: https://scholar.google.com/citations?user=4R3TdUYAAAAJ&hl=en
ResearchGate: https://www.researchgate.net/profile/Manhal-Alhilali
LinkedIn: https://www.linkedin.com/in/manhalhilali/

EXPERIENCE

University of Hyogo 05/2023 – present | Kobe, Japan
Specially Appointed Assistant Professor

Graduate School of Information Science
School website: https://www.u-hyogo.ac.jp/gsis/index_en.html
As a part of moonshot project for severe weather enhancement https://rain-c.dpri.kyoto-u.ac.jp/list/1-7/, My research involves advanced numerical cloud modeling using the Super-Droplet Method, high-performance computing, and remote sensing data to enhance severe weather predictions.

Omar Al-Mukhtar University (OMU) 02/2022 – 04/2023 | Albayda'a, Libya
Senior Lecturer

Faculty of Engineering, Department of Computer Engineering
University website: http://omu.edu.ly/

- Deliver the following courses: CPE313 Database Management Systems, CPE323 Database Development, CPE316 Data Communication, and Computer Networks, CPE521 Computer Design, CPE321 Microprocessors & Microcontrollers, CPE411 Embedded Systems, CPE532 Internet of Things, and CPE424 Machine learning.
- Faculty Representative for the Quality Assurance and Accreditation center.
- Supervised five undergraduate projects.

Botho University 11/2022 – 03/2023 | Gaborone, Botswana
Adjunct Lecturer (Part-time, Remote)

Faculty of Engineering and Technology
University website: http://botswana.bothouniversity.com/
Online teaching the following topics:

- **C9-IFM-15 INFRASTRUCTURE MANAGEMENT:** This module aims to help the students of professional courses by familiarizing them with the concepts of IT infrastructure and its management and providing them with the requisite expertise.

- **C9-ADS-17 ADVANCED DATABASE SYSTEMS:** To evaluate and develop advanced topics in big data, databases, and modern data-intensive systems; to explore emerging architectures for database management systems; to understand how relational systems are implemented and the implications for database performance; and to assess the impact of emerging database standards on future systems.

Universiti Kuala Lumpur (UniKL) 09/2019 – 09/2021 | Kuala Lumpur, Malaysia
Contract Researcher (Postdoctoral)

British Malaysian Institute (BMI) Advanced Telecommunication Research Cluster
School website: `https://research.unikl.edu.my/view/manhal`

- Research title: Multicast Satellite Systems for 5G Communications.
- Successfully applied and was granted a research grant from the Ministry of Higher Education.
- Became the Course Leader for BED17103 Introduction to Digital Electronics, with a course evaluation of 4.9/5 and teaching support of three tutorial classes.
- Lecturer for BED18403 Fundamental of Electronics and BEB20104 Engineering Mathematics 3, with course evaluations of 4.3/5 and 4.4/5.

Universiti Teknologi Malaysia (UTM) 08/2015 – 07/2019 | Johor, Malaysia
Part-time Researcher

Wireless Communication Centre (WCC) Collaboration with Joanneum Research and European Space Agency.
Center website: `http://wcc.utm.my`

- Title: Measurement and Assessment of Second-Order Statistics of Ka-band SatCom Systems in Tropical Regions.
- ESTEC Contract Number: 4000106180/12/NL/NR.
- Grant Amount: € 200,000.00.
- Duration: 5 Years.
- Scope: Propagation Experimental Setup of Dual Site Diversity Satellite Ground station at Ka-band Syracuse 3A Satellite.

Universiti Teknologi Malaysia (UTM) 06/2016 – 11/2017 | Johor, Malaysia
Part-time Research Assistant

Wireless Communication Centre (WCC) HICoE Research Grant
Center website: `http://wcc.utm.my`

- Title: Electromagnetic Scattering from Rain Drop Size Distribution Measurement for 5G Networks.
- Grant Number: R.J130000.7823.4J221.
- Grant Amount: RM 119,910.00.
- Scope: Characterisation of mmWave links for 5G wireless networks in the tropical climate.

EDUCATION

Universiti Teknologi Malaysia (UTM) 09/2014 – 10/2018 | Johor, Malaysia
Doctor of Philosophy (Ph.D.) in Electrical Engineering

Research Title: "Rain Attenuation Prediction Based on Raindrop Size Distribution in Malaysia"
`http://eprints.utm.my/84160/`
Research topic: As part of UTM international cooperation with Joanneum Research's project (Measurement and assessment of second-order statistics of Ka-band SatCom systems in the tropical region), which is carried out under order by the European Space Agency. This research studies the detailed microphysical properties of rain and their effects on wireless communications.
Advisor: Prof. Dr. Jafri Din
University website: `http://www.utm.my/`

Universiti Teknologi Malaysia (UTM) 9/2012 – 08/2014 | Johor, Malaysia
Master of Engineering (Electrical – Electronics and Telecommunications)

Project title: "Ultra wide-band antenna for on-body communication systems"
`http://eprints.utm.my/48665/`
Project topic: Designing an antenna for on-body communication systems, to be used for medical purposes without exposing the human body to harmful radiations.
Advisor: Assoc. Prof. Dr. Muhammad Ramlee Kamarudin
University website: `http://www.utm.my/`

Omar Al-Mukhtar University 09/2006 – 08/2010 | Albayda'a, Libya
Bachelor Degree in Engineering Science (Electrical Engineering)

Major: Telecommunications
University website: `http://omu.edu.ly/`

PUBLICATIONS AND CONFERENCES

Cumulonimbus Associated with "Guerrilla Heavy Rain" under Varying Background Aerosol Loading: Super-Droplet Method Simulations
The 7th International Workshop on Nonhydrostatic Models (NHM-WS 2025), Morioka, Japan. November 2025.

Manhal ALHILALI, Yutaro Nirasawa, Shin-ichiro Shima and Wojciech W. Grabowski

Evaluating Cloud Seeding Effectiveness in Convective Clouds with the Advanced Super-Droplet Method
11th WMO Scientific Conference on Weather Modification, Pune, India. November 2025.

Manhal ALHILALI, Anu Gupta, Shin-ichiro SHIMA, Seiya Nishizawa, Soumya SAMANTA, Sachin Patade, Neelam Malap, Kulkarni Gayatri and Thara PRABHAKARAN

Advancing the Super-Droplet Method for Severe Convective Clouds: Evaluating Cloud Seeding Under Varying Aerosol Conditions
Busan IAMAS-IACS-IAPSO Joint Assembly 2025, Busan, South Korea. July 2025.

Manhal ALHILALI, Shin-ichiro SHIMA, Seiya Nishizawa, Soumya SAMANTA, Sachin Patade, Neelam Malap, Kulkarni Gayatri and Thara PRABHAKARAN

Development and Comparative Study of the Super-Droplet Method for Analyzing Microphysical Characteristics of Deep Convective Clouds During the Indian Summer Monsoon
International Conference on Clouds and Precipitation, Jeju, South Korea. July 2024.

Manhal ALHILALI, Shin-ichiro SHIMA, Soumya SAMANTA and Thara PRABHAKARAN

Evaluation of the Super-Droplet Method for Enhanced Cloud Microphysics Simulations of Deep Convective Clouds
104th AMS Annual Meeting, Baltimore, USA. January 2024.

Manhal ALHILALI, Shin-ichiro SHIMA, Soumya SAMANTA and Thara PRABHAKARAN

Unraveling the Microphysics of Isolated Cumulonimbus Clouds: Advances in Simulation with the Super-Droplet Method (SDM)
The 6th International Workshop on Nonhydrostatic Models (NHM-WS 2023), Sapporo, Japan. August 2023.

Manhal ALHILALI, Shin-ichiro SHIMA, Soumya SAMANTA and Thara PRABHAKARAN

Analysis of Equatorial Rainfall Characteristics by Drop Size Distributions and Rain

Rate-Radar Reflectivity Relation
2019 13th European Conference on Antennas and Propagation (EuCAP), Krakow, Poland

M. Alhilali, H. Y. Lam, S. L. Jong, and J. Din

A Methodology for Precise Estimation of Rain Attenuation on Terrestrial Millimetre Wave Links from Raindrop Size Distribution Measurements
Telkomnika, Vol.17, No.5

M. Alhilali, M. Ghanim, J. Din, and H. Y. Lam

Rain attenuation in broadband satellite service and worst month analysis
Indones. J. Electr. Eng. Comput. Sci., Vol.15, No.3

I. Abubakar, J. Din, H. Y. Lam, M. Alhilali

Rain Attenuation Statistics for Mobile Satellite Communications Estimated from Radar Measurements in Malaysia
Telkomnika, Vol.17, No.3, pp. 1110–1117

M. I. Abozeed, M. Alhilali, H. Y. Lam, and J. Din

Rain Attenuation Statistics over 5G Millimetre Wave Links in Malaysia
Indones. J. Electr. Eng. Comput. Sci., Vol.14, No.2, pp. 1012–1017

M. Ghanim, M. Alhilali, J. Din, H. Y. Lam

Comparison of Raindrop Size Distribution Characteristics Across the Southeast Asia Region
Telkomnika, Vol.16, No.6, pp. 2522–2527

M. Alhilali, J. Din, and H. Y. Lam

Tropospheric Scintillation with Rain Attenuation of Ku Band at Tropical Region
Telkomnika, Vol.16, No.5, pp. 1982–1987

I. F. El-Shami, H. Y. Lam, J. Din, A. I. Elgayar, and M. Alhilali

Estimation of Millimeter Wave Attenuation Due to Rain Using 2D Video Distrometer Data in Malaysia
Indones. J. Electr. Eng. Comput. Sci., vol.7, no.1, pp. 164–169

M. Alhilali, J. Din, M. Schönhuber, and H. Y. Lam

Impact of Rain Attenuation on 5G Millimeter Wave Communication Systems in Equatorial Malaysia Investigated Through Disdrometer Data
2017 11th European Conference on Antennas & Propagation (EuCAP), Paris

H.Y. Lam, L. Luini, J. Din, M. Alhilali, S. L. Jong, F. Cuervo

Interference and Electromagnetic Compatibility Challenges in 5G Wireless Network Deployments
Indones. J. Electr. Eng. Comput. Sci., Vol.5, No.3, pp. 612–621

I. Abubakar, J. Din, M. Alhilali, H. Y. Lam

Characteristics Analysis of Stimulated Raman Scattering Effects on Bidirectional WDM-PON
IGCESH 2016, Johor, Malaysia

S. Abdullah, A. B. Mohammad, K. Y. You, M. Alhilali

SKILLS

Data analysis and visualisation, SQL, C/C++, Matlab, Python, R, Fortran, Power BI, CST, HFSS, VHDL, Verilog, Paraview

INTERESTS

Coffee Connoisseur, Technology Aficionado, Hiking, Cultural Explorer, Photography Hobbyist