Ibrahim Ghareeb

Ibrahim Ghareeb, He obtained the B.Sc. degree in electrical engineering from Yarmouk University, Jordan, in 1985, the M.Sc. degree in electrical engineering from Jordan University of Science and Technology, Jordan in 1988, and the Ph.D. degree in electrical engineering from the University of Ottawa, Canada, in 1995. His Ph.D. research was focused on hybrid frequency phase modulation and its applications over mobile fading channels. Between 1988 and 1991 he was a lecturer and system engineer at the ministry of higher education in Jordan. Since 1995 he has been with the Department of Electrical Engineering at the Jordan University of Science and Technology (JUST), where he is currently an associate professor. Between 2006 and 2009 he was vice dean; faculty of graduate studies at JUST. Between 2010 and 2011 he was the head of the department chair for the electrical engineering department at Alzaytoonah University. Between 2011 and 2013 he was the chairman of the department of Electrical Engineering at the Jordan University of Science and Technology. In 1997 he spent a summer term as a visiting professor and research associated at the School of Information Technology and Engineering of the University of Ottawa, Canada.

His area of research is digital communications with emphasis on digital modulation and coding, wireless communications, wireless ad-hoc and sensor networks, multiple access for wireless high speed communications, spread spectrum and MIMO communication systems. He collaborates closely with the local industry and research institutions. He has been active in organizing several international conferences on communications. He is a professional engineer in Jordan and a member of IEEE.

Contact Information:

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Professional Preparation and Education:

INSTITUTION	DEGREE	YEAR CONFERRED	FIELD OF STUDY
University of Ottawa, Ottawa, Canada	Ph.D.	1995	Electrical Engineering/ Wireless communications
Jordan University of Science and Technology, Irbid, Jordan	M.Sc.	1988	Electrical Engineering
Yarmouk University, Irbid, Jordan	B.Sc.	1985	Electrical Engineering

Master Thesis Title:

- Detecting Single and Multiple Frequencies in a Signal Highly Immersed with Noise

PhD Thesis Title:

- Hybrid Frequency Phase Modulation: Performance Analysis and Applications

Appointments:

- April 2006– present: Associate Professor, Department of Electrical Engineering, Jordan University of Science and Technology, Irbid, Jordan.
- September 2011-September 2013: Associate Professor and Department Chairman, Department of Electrical Engineering, Jordan University of Science and Technology, Irbid, Jordan.
- September 2009-September 2011: Associate Professor and Department Chairman, Department of Electrical Engineering, Alzaytoonah University, Amman, Jordan.
- September 2006-September 2009: Associate Professor, Department of Electrical Engineering, and Vice Dean; faculty of graduate studies, Jordan University of Science and Technology, Irbid, Jordan.
- February. 1995-April 2006: Assistant Professor, Department of Electrical Engineering, Jordan University of Science and Technology, Irbid, Jordan.

Undergraduate Courses Taught:

Communication systems	4th Year
Digital Communications	5th Year
Wireless Communication Systems	5th Year
Applied Probability Theory	5th Year
Electromagnetics I and II	3rd Year
Numarical Analysis	3th Year

Graduate Courses Taught:

- Stochastic Processes
- Digital Data Transmission
- Spread Spectrum Communications
- Error Control Coding
- Information Theory and coding
- Wireless Communications
- Advanced Wireless Communications

Laboratories Instructed or Taught:

Electric Circuits	2nd Year
Electronic Circuits	3rd Year
Digital Integrated Electronics	3rd Year
Communication system	4th Year
Digital Communications	5th Year

Research Areas of Interest:

- Communication Theory " *Coding and modulation*"
- Wireless Communications and Channel characteristics
- Wireless Ad-Hoc and Sensor Networks
- Spread Spectrum Communications and Multiple Access Techniques
- MIMO communication systems
- Space time coding and diversity
- Simulation of Communication Systems

Supervised Graduation Projects:

More than 50 projects in most areas of interest in communications and electronics

Supervised Master Theses:

Abdul-Rahman Katawneh	Performance Evaluation of Efficient Modulation Communication Systems	May 1997
Khaldoun Y. Saleh	Performance Evaluation of Multiphase Signals Spread Spectrum Communication Systems	May 1997
Shirouk M. H. Ali	Performance Evaluation of a Multiple Tone Multicarrier CDMA System over a Mobile Radio Fading Channel	Dec. 1998
Mohammed Hayajneh	Optical Fiber Feeder for Cellular Mobile Communication Systems Employing Hybrid Modulation Scheme	Jan. 1998
Ali A. Jamous	Performance Analysis of DPSK/DS-CDMA Signals over Nakagami Radio Fading Channels	May 2000
Amneh Mobbaiden	Combined Coding/Modulation Scheme for Multiple Carrier Phase Shift Keying Signals: Performance Evaluation and Application	May 2000
Youssif B. Al-Nashif	A Topology Transparent Transmission Scheduling Method in Multi-Hop Mobile Packet Radio Network Using Combinatorial Theory	July 2000
Shadi . Ayoub	The Impact of Self-Similarity on Throughput Analysis of Packet Switching	July 2000
Murad Abu Sbeih	Noncoherent and Differentially Coherent Modulations over Generalized Mobile Radio Fading Channels with Correlated Branches: Performance Analysis and App.	Aug. 2001
Aladin Abu Abed	Orthogonal Frequency Division Multiplexing (OFDM) Systems for Wireless Communication over Nakagami Channels	Aug. 2001
Redha Radaydeh	Performance of Multiple Symbol Differential Detection of MPSK Signals with Postdetection Diversity Combining in Arbitrarily Correlated Generalized Mobile Fading Channels	Aug. 2003
Shadi Abu Surra	Efficient Modulations over Generalized Mobile Fading Channels with Correlated Branches: Performance Analysis and Applications	Aug. 2003
Mutamed Al-Khatib	Efficient Modulations with OFDM for Next-Generation Mobile Communications Systems	Oct. 2003
Ali Al- Bashabsha	Generalized Diversity over Generalized Mobile Fading Channels with Correlated Branches	Jan. 2005
Sameer Abu-Annadi	CPM for Next Generation Mobile Communication System	May 2007
Mohammed Alqodah	Bifurcation Analyses of Phased Locked Loop with Time Delay	Jan. 2008
Ahlam S. Jawarneh	Efficient Modulation Schemes over Generalized Mobile Weibull Fading Channels	May 2008
Ahmad M. Abu Al Haija	GMSK Modulation over Weibull Fading Channels: Performance Analysis and Applications	July, 2008
Esra'a Bashayreh	Performance of Wireless Ad-Hoc Networks that used Noncoherent and Differentially Detecting Signals with Diversity Reception over Correlated and Unbalanced Weibull Fading Channels	July, 2010
Amani Atiani	Gaussian Class Multivariate Distributions: Theory and Applications over Mobile Fading Channels	Aug. 2013
Hazem M. Sallouha	Performance Evaluation of Wireless Sensor Networks in 3-D Topographical Surfaces Over Mobile Fading Channels.	Oct. 2013
Mariam Yahya	Three Dimensional Wireless Ad-Hoc Networks Topology with Cooperative Diversity	Aug. 2014
Mariam Harb	Impact of Co-Channel Interference on Wireless Networks with Cooperative Diversity	May, 2016
Abdallah A. Jarwan	The Impact of Mobility on the performance of Three-Dimensional AD HOC Networks	Aug. 2016

Deemah Hail Tashman	Performance Analysis for Mobile Relay Based Mobile-to-Mobile Two-Way Relaying System	July, 2017
Suzan Saqer Al-Zoubi	The Impact of Co-Channels Interference on Two-Way Mobile to Mobile Communications in Wireless Networks	August, 2017

Master Theses Committee Membership:

More than 50 theses at different Universities inside and outside Jordan

National Committee Membership

Jun. 2005	Natoinal Committee member: Recearch Committee in Radio Sprctrum/ Telecommunications Regulatory commission- Jordan

Institutional and Professional Service:

1. Reviewer, IEEE Transaction on Communications. IEEE Transaction Journal on Selected Areas in Communications, IEEE Communications Letters, IEEE-Transactions on Vehicular Technology, IEEE Transactions on Wireless Communication.
2. Reviewer, IET, Communications.
3. Reviewer, International Journal of Electronics
4. Reviewer, International Journal of Electronics Letters
5. Reviewer, International Journal of Modeling and Simulation.
6. Editorial Board, JEA Journal of Electrical Engineering.
7. Technical Program Committee, International Conference on Advances in Computing, Communications and Informatics (ICACCI-2013) Mysore, India
8. Organizing Committee and chair, Jordan International Electrical and Electronic Engineering Conference: JIEEEC- 2011
9. Organizing Committee and Vic chair, Jordan International Electrical and Electronic Engineering Conference: JIEEEC- 2013
10. Organizing Committee, The 24-th Federation of Arab Engineer Conference, The Engineering Education-2006.
11. Review Organizer and TPC Member, Annual Internet and Communications Engineering Technical Exchange Meeting (e-CETEM), Saudi Aramco, 2003.
12. Member of many Committees inside the department of electrical engineering, including the Quality Assurance Committee and the Curriculum Development Committee.

Publications

[1] Ibrahim Ghareeb and Arwa Jwaifel, Impact of Co-Channel Interference on Performance of Dual-Hop Wireless Ad-hoc Networks over α-μ fading channels, International Journal of Communication Systems, doi.org/ DOI:10.1002/dac.4500, Article accepted on 18 May, 2020

[2] Ibrahim Ghareeb and Jamal Darwish, Statistics of Cascaded Rayleigh Fading Channels with Arbitrary Correlation, IET Communications, Article accepted on 1 July, 2020.

[3] Ibrahim Ghareeb, Mariam Yahya "Three-dimensional wireless ad hoc networks with random nodes distribution", International Journal of Electronics, Article accepted on 30 Aug. 2020. doi.org/10.1080/00207217.2020.1818837

[4] Ibrahim Ghareeb and Deemah Tashman, Statistical Analysis of Cascaded Rician Fading Channels, International Journal of Electronics Letters, VOL. 8, NO. 1, pp. 46–59, 2020. https://doi.org/10.1080/21681724.2018.1545925,

[5] Ibrahim Ghareeb and Amani Atiani, Multivariate η−μ fading distribution with arbitrary correlation model, International Journal of Electronics, , Issue 3, Volume 105, 2018, Pages: 487-503, DOI: 10.1080/00207217.2017.1378376, Published online: 20 Sep 2017.

[6] **Ibrahim Ghareeb** and A. Abu Al Haija, Performance of Gaussian minimum shift keying and quadrature differential phase shift keying modulations with ad-hoc wireless networks over weibull fading channels, JEA Journal of Electrical Engineering, vol. 1, no. 1, pp. 42-55, 2016

[7] Ibrahim Ghareeb and Amani Atiani, "Bit Error Rate Analysis of Mobile Ad Hoc Networks over η − μ Fading Channels", Palestine Technical University Research Journal, Volume 2, Issue 2, Page(s): 25-34, Sep. 2014.

[8] Ibrahim Ghareeb and Amani Atiani, Gaussian Class Multivariate α− μ Distribution: Theory and Applications over Correlated Fading Channels, 2014 IEEE 80th Vehicular Technology Conference - VTC2014-Fall, Vancouver, Canada, 14–17 September 2014.

[9] Ibrahim Ghareeb and E. Bashayreh, Differential Detection of QPSK Signals with Postdetection EGC over Correlated and Unbalanced Weibull Fading Channels"

Jordan International Electrical and Electronic Engineering Conference, JIEEEC'2013, Amman, Jordan, April 2013.

[10] **Ibrahim Ghareeb** and A. Abu Al Haija, Performance of GMSK and QDPSK Signals with Diversity Reception in Arbitrarily Correlated and Unbalanced Weibull fading channels, 72nd IEEE Vehicular Technology Conference-VTC2010-Fall, Ottawa, Canada, 6–9 September, 2010.

[11] **Ibrahim Ghareeb** and A. Abu Al Haija, GMSK Modulation over Weibull Fading Channels and its Impact on the Effective Transport Capacity of Ad Hoc Wireless Network, *IEEE GLOBECOM 2008*, Page(s):1 – 6, New Orleans, LO, Nov. 30 2008-Dec. 4 2008.

[12] **Ibrahim Ghareeb**, "Error Performance of Noncoherent MT-MFSK Signals with Diversity Reception over Generalized Mobile Fading Channels", *International Journal of Modelling & Simulation*, volume 27, Issue 4, Pages 314-323, Dec. 2007.

[13] Ibrahim Ghareeb and S. Abu-Surra, "Differential Detection of GMSK Signals with Postdetection MRC over Correlated and Unbalanced Nakagami-m Fading Channels", IEE Proceedings Communications, Volume 152, Issue 2, Page(s): 221 - 228 April 2005.

[14] **Ibrahim Ghareeb**," Noncoherent MT-MFSK Signals with Diversity Reception in Arbitrarily Correlated and Unbalanced Nakagami-m Fading Channels", *IEEE Journal on Selected Areas in Communications*, Vol. SAC-23, Issue 9, pp. 1839-1850, Sep. 2005.

[15] **Ibrahim Ghareeb** and M. Abu-Sbeih, "Performance of MFSK Signals with Postdetection Square-Law Diversity Combining in Arbitrarily Correlated Nakagami-m Fading Channels", *IEEE Communications Letters*, Vol. 8, Issue: 2, pp. 108-110, Feb. 2004.

[16] **Ibrahim Ghareeb** and M. Abu-Sbeih , "Performance of QDPSK Signals with Postdetection Equal Gain Diversity Combining in Arbitrarily Correlated Nakagam-m Fading Channels", *IEEE Communications Letters* ,Vol. 5, Issue: 11, pp. 441 - 443, Nov. 2001.

[17] **Ibrahim Ghareeb** and A. Yongaçoglu, "Performance Analysis of Frequency Hopped/Coherent MPSK in the presence of Multitone Jamming", *IEEE* Transactions *on Communication***s**, Vol. 44, pp.152-155, Feb. 1996.

[18] **Ibrahim Ghareeb**, "Bit Error Rate Performance and Power Spectral Density of a Noncoherent Hybrid Frequency-Phase modulation System, *IEEE Journal on Selected Areas in Communications* ", Volume 13, Issue 2, Page(s):276 - 284, Feb. 1995.

[19] **IbrahimGhareeb** and A. Yongaçoglu, "Performance of JFPM over Rayleigh Fading Channels", IEE Proceedings Communications, Volume 141, Issue 4, Page(s):241 - 247, Aug. 1994.

[20] **Ibrahim Ghareeb** and A. Yongaçoglu, "Performance Evaluation of Slow Frequency Hopped Joint Frequency-Phase Modulation in Broadband and Partial-Band Noise Jamming", IEICE Trans. on Communications, vol. E-77-B, pp. 891 - 899, July 1994.

[21] **Ibrahim Ghareeb,** "Noncoherent MT-MFSK Signals with Diversity Reception over Bandwidth Constrained and Nakagami Fading Channels", *IEEE International Symposium on Personal, Indoor and Mobile Radio Communications*, PIMRC 2004, Vol. 1, Pages:146 – 150**,** Spain, Sept. 2004**.**

[22] **Ibrahim Ghareeb** and A. Yongaçoglu, "Performance of FFH/MT-FSK Based on BIB-design with Noise-Normalization SLC Soft Decision Receiver Under Partial-Band Jamming Interference", *Jordan International Electrical and Electronic Engineering Conference*, JIEEEC'2001, Amman, Jordan, April 2001.

[23] **Ibrahim Ghareeb** and A. Jamous , "Performance Evaluation Of QDPSK Over Nakagami Fading Channels With Diversity Reception", *IEEE International Symposium on Personal Indoor and Mobile Radio Communications*, PIMRC 2000, Vol. 1, Pages: 246 - 250, London, UK. Sep. 2000.

[24] **Ibrahim Ghareeb** and M. Banat, "Performance Evaluation of Heterodyne Optical Multi-Carrier MFSK Based on BIB Design", *IEEE Military Communications Conference*, MILCOM 1999. IEEE Volume: 1, Page(s): 702 -706. New Jersey, USA, Oct. 1999.

[25] **Ibrahim Ghareeb** and A. Yongaçoglu "Diversity Achieved by Multiple Tone FSK Over Fading Channels", *International Symposium on Signals, Systems, and Electronics, 1998*. ISSSE 98. pp. 118 -123, Pisa, Italy.

[26] **Ibrahim Ghareeb** and A. Yongaçoglu, Performance of noncoherent multiple tone-frequency shift keying signals in Rayleigh fading channels with diversity and diversity combining", *IEEE International Symposium on Personal, Indoor and Mobile Radio Communications*, PIMRC 1998, pp. 554 - 558, Boston, USA, Sep. 1998.

[27] **Ibrahim Ghareeb** and A. Yongaçoglu, " Performance of fast frequency hopped multiple tone FSK over Rayleigh fading channels " *48th IEEE Vehicular Technology Conference, 1998*. VTC 98. Volume: 3, Page(s): 2353-2357 Ottawa, Canada, May 1998.

[28] **Ibrahim Ghareeb** and K. Saleh," The Performance Analysis of Frequency Hopped M-ary PSK under Multitone Jamming and AWGN Channels," *Jordan*

International Electrical and Electronic Engineering Conference, Amman, Jordan, Apr. 27-29, 1998.

[29] **Ibrahim Ghareeb** and A. Qatawneh, "Performance Evaluation of a Noncoherent MT-FSK/CDMA over Mobile Radio Channels", *Jordan International Electrical and Electronic Engineering Conference*, Amman, Jordan, Apr. 27-29, 1998.

[30] M. M. Banat**, Ibrahim Ghareeb** and M. Hayajneh, "Power spectrum of hybrid optical modulated signals employed in cellular mobile communication systems,", *Jordan International Electrical and Electronic Engineering Conference*, Amman, Jordan, pp. 199-204, Apr. 27-29, 1998**.**

[31] **I. Ghareeb** and A. Yongaçoglu, "Joint Frequency-Phase Modulation over Rayleigh FadingChannels", in Information Theory and Applications, Lecture Notes in Computer Science 783, pp. 101-112, Springe Verlag 1994.

[32] **I. Ghareeb**, A. Yongaçoglu, "Performance Analysis of Frequency Hopped Coherent MPSK in the presence of Multitone Jamming", Proc. of MILCOM-94, New Jersey, Oct. 1994.

[33] **I. Ghareeb**, A. Yongaçoglu, "Noncoherent Fast Frequency Hopped/Joint Frequency Phase Modulation over Rayleigh Fading Channels", Proc. of MILCOM-94, New Jersey, Oct. 1994.

[34] **I Ghareeb**, A. Yongaçoglu, "Noncoherent Fast Frequency Hopped/Hybrid Frequency Phase Modulation over Rayleigh Fading Channels", Proc. 17th Biennial Symposium on Communications, pp. 435 - 439, Kingston, 1994.

[35] **I. Ghareeb**, A. Yongaçoglu, "Performance of Frequency Hopped Joint Frequency Phase Modulation in the Presence of Broadband and Partial-Band Noise Jamming", *IEEE International Symposium on Personal, Indoor and Mobile Radio Communications*, PIMRC 199**3**, pp. 662 - 666, Yokohama, Sept. 1993.

[36] **I. Ghareeb**, A Yongaçoglu, "Joint Frequency-Phase Modulation", Proc. Canadian Conf. on Elect. & Comp. Eng., pp. TM2.1-4, Toronto, Sept. 1992.

[37] **I. Ghareeb**, A Yongaçoglu, "Neural Network M-ary FSK Receiver", Proc. of 16th Biennial Symposium on Comm., pp. 181 - 184, Kingston, May 1992.

[38] Ibrahim Ghareeb and Amani Atiani, Arbitrarily correlated and Unbalanced Multivariate $\eta - \mu$ Fading Distribution with Application to the Performance Evaluation of Diversity Systems", submitted for possible publication, IEEE Transactions on wireless Communications, June. 2020

Professional memberships:

Jordan Engineers Association
IEEE Member

Languages:

1) Arabic (Mother Tongue)
2) English

Honors and Awards:

- 1989: Late King Hussein Royal Award for outstanding graduate students.
- 1993: Best Paper Award {IEEE/PIMRC)

References:

1) Prof. A. Yongaçoglu , University of Ottawa, Canada
2) Prof. Ahmed Abu El-Haija, *Jordan University of Science and Technology*, Irbid, Jordan
3) Prof. Mansour Abbadi, *Jordan University of Science and Technology*, Irbid, Jordan.

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