CURRICULUM VITAE

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Dr. Al-Tarawneh joined the Department of Communications Engineering at Princess Sumaya University for Technology (PSUT) in 2019. He has become an Associate Professor of Communications Engineering at PSUT since 2024. Dr. Al-Tarawneh has served as the Head of the Communications Engineering Department since 2019. He was a Senior/Consultant technical engineer at the Royal Scientific Society (RSS) from 1999 to 2019. He received his Ph.D. in Electrical and Computer Engineering from Southern Illinois University Carbondale (SIUC), Illinois in 2016, USA, his M.Sc. degree in Communications Engineering from the University of Jordan, Amman, Jordan in 2008, and his B.Sc. degree in Communications Engineering from Mutah University, Al-Karak, Jordan in 1999. Dr. Al-Tarawneh is currently the IEEE Jordan Communications Society (IEEE ComSoc) Chapter Chair.

Dr. Al-Tarawneh's current research interests are in optical communication networks, elastic optical networks (EON), access optical networks and radio over fiber, machine learning, and wireless communications and related fields.

❖ Academic Degrees:

- **Ph.D.** Electrical and Computer Eng. (2016). Optical Communication Networks. Southern Illinois University Carbondale (*SIUC*).
  Dissertation Title: *Dynamic Adaptation of Bandwidth Granularity for Multipath Routing in Elastic Optical OFDM-Based Networks*. **Excellent.**

- **M.Sc.** Electrical Engineering / Communications/ Wireless Comm (2008). The University of Jordan.
  Thesis Title: *Adaptive Service Differentiation for IEEE 802.11 Wireless LAN*. **Very Good**.

- **B.Sc.** Electrical Engineering/communications (1999). Mutah University. **Very Good**.

❖ Research Interests:

✓ Optical communication networks.
✓ Fiber optics communication.
✓ Wireless Communications.
✓ Wireless Health-Care Networks.
✓ Interactive and Smart Education.

❖ Work Experience:

- Head of the **Communications Engineering** Department at PSUT (Sep 2019 – present).
- Associate Professor in the Communications Engineering Department at the King Abdullah II School of Engineering, Princess Sumaya University for Technology (PSUT), Amman, Jordan. (January 2024 - present).
- Head of the **Computer Engineering Department** at PSUT (Summer 2021/2022).
- Assistant Professor in the Communications Engineering Department at King Abdullah II School of Engineering, Princess Sumaya University for Technology (PSUT), Amman, Jordan. (January 2019 - 2024).
- Main specialist Engineer at Royal Scientific Society(RSS)/ Quality Sector/ Directorate of Biomedical Engineering (DBE). Consultant Engineer. (1999- 30/1/2019).
- Rank: Consultant Engineer in Electrical Eng- Medical Engineering. JCPQA/JEA issued the certificate on 7/10/2018.

❖ Teaching Experience:

- **Full-time lecturing for the following courses at PSUT** (2019-Present):
  - Undergraduate Courses:

    - Digital Signal Processing.
    - Optical Communications.
    - Communication Networks.
    - Antenna and Microwave Engineering.
    - Technical Writing and Communication Skills.

  - Graduate course:

    - Optical communications.

  - Supervisor for the following engineering laboratories:

    - Programming applications in signals and systems Lab.
    - Communications Lab.
    - Optical communications Lab.
    - Automatic Control Lab.
    - Engineering workshop.

- *Teaching Assistant* for the following classes at *SIUC* (2012-2016):

    - Fiber Optics Communication, ECE 549.
    - Digital Signal Processing, ECE 468.
    - Neural Networks, ECE 572 (Instructor/Summer 2014).
    - Integrated Photonics, ECE 537.
    - Photonics I, ECE 441 (Lab instructor).
    - Photonics II, ECE 448 (Lab Instructor).
    - Intro Discrete Logic/Digital Sys, ECE 225.
    - College Algebra 107 & 108.
    - Physics University lab 253B & 255A.

- **Part-time lecturing for the following courses at AL-ISRA private university (2009- 2010):**

  - Electromagnetics I.
  - Probability, statistics, and Random Variables.
  - Digital Communications.
  - Analog communications.

❖ Publications: Journals & Conferences:

✔ **Al-Tarawneh, L.** (2023). An Optimal Algorithm for Energy Harvesting in Optical Networks. *Optical Fiber Technology*, *78, 103288.* https://doi.org/10.1016/j.yofte.2023.103288

✔ A. Alqatawneh, **L. Al-Tarawneh**, Z. Almajali, "Indexed-channel estimation under frequency and time-selective fading channels in high-mobility systems" International Journal of Electronic and Computer Engineering (IJECE), vol. 13, no. 3, pp. 2865-2875, 2023 https.doi.org/10.11591/ijece.v13i3.pp2865-2875

✔ Altakhaineh, Amjaad T., Saqer S. Alja'afreh, Aser M. Almatarneh, Eqab Almajali, **Luae Al-Tarawneh**, and Jawad Yousaf. 2023. "A Quad-Band Shared-Aperture Antenna Based on Dual-Mode Composite Quarter-Mode SIW Cavity for 5G and 6G with MIMO Capability" *Electronics* 12, no. 11: 2480. https://doi.org/10.3390/electronics12112480

✔ **L. Al-Tarawneh,** A. Mehyar, S. E. Alassaf, and M. Al-Mariat, "Environmental Tracking System using IoT Based WSN: Smart Agriculture," 2022 4th IEEE Middle East and North Africa COMMunications Conference (MENACOMM), 2022, pp. 147-152. doi: 10.1109/MENACOMM57252.2022.9998269.

✔ **Al-Tarawneh, L.,** & Saraereh, O. A. (2022). An optimal method for resource allocation in SDN optical networks. *Optical Fiber Technology*, *74*, 103120. https://doi.org/10.1016/j.yofte.2022.103120

✔ Yasin, A., **Al-Tarawneh, L.**, El-Issa, F. and Al-Zoubi, A. (2022), "Students' achievement in an online course on technical writing and communication skills", Interactive Technology and Smart Education, Vol. 19 No. 4, pp. 526-543. https://doi.org/10.1108/ITSE-05-2022-0057.

✔ Al-Zoubi, Abdallah, Ashraf Tahat, Rami A. Wahsheh, Mohammad Taha, **Luae' Al-Tarawneh**, and Omar Hasan. "A Bachelor Degree Program in IoT Engineering: Accreditation Constraints and Market Demand." International Journal of Engineering Pedagogy 12, no. 4 (July 2022): 17–34. doi:10.3991/ijep.v12i4.31429.

✔ F. R. Shahroury, **L. Al-Tarawneh** and A. Al-Zoubi, "In-the-Online-Class Remote Lab in Post COVID-19 Pandemic," 2022 IEEE Global Engineering Education Conference (EDUCON), 2022, pp. 677-682. doi: 10.1109/EDUCON52537.2022.9766794.

✔ M Al-Nasa'h, L. **Al-Tarawneh**, FMA Awwad, and I Ahmad. "Estimating students' online learning satisfaction during COVID-19: A discriminant analysis", Heliyon, vol. 7, no. 12, E08544, Dec 01, 2021.

✔ **L. Al-Tarawneh**, M. Al-Nasa'h, and F. A. Awwad, "The Effect of the COVID-19 Pandemic among Undergraduate Engineering Students in Jordanian Universities: Factors Impact Students' Learning Satisfaction," *2021 Innovation and New Trends in Engineering, Science, and Technology Education Conference (IETSEC)*, 2021, pp. 1-7. doi: 10.1109/IETSEC51476.2021.9440500.

✔ O. A. Saraereh, **L. Al-Tarawneh**, A. Ali and A. M. Al Hadidi, "Design and analysis of a novel antenna for the wireless communication," Intelligent Automation & Soft Computing, vol. 31, no.1, pp. 607–619, 2022.

✔ Ali Alqatawneh, **Luae' Al-Tarawneh**, OFDM System with Half-Symbol-Spaced Receiver and Channel Acquisition Error over Multipath Fading Channels. Jordan Journal of Electrical Engineering (JJEE). Vol 7, No 2, pp 96-107, June 2021.

✔ Omar A. Saraereh, Ashraf Ali, **Luae Al-Tarawneh**, Imran Khan, A robust approach for barrier-reinforcing in wireless sensor networks, Journal of Parallel and Distributed Computing, volume 149, 2021, pages 186-192,

✔ **Al-Tarawneh, L**., Alqatawneh, A., Tahat, A., & Saraereh, O. (2020). Evolution of optical networks: from legacy networks to next-generation networks, Journal of Optical Communications (published online ahead of print 2020).

✔ Alsafasfeh, Q.; Saraereh, O.A.; Ali, A.; **Al-Tarawneh**, L.; Khan, I.; Silva, A. Efficient Power Control Framework for Small-Cell Heterogeneous Networks. Sensors 2020, 20, 1467.

✔ **Al-Tarawneh, L.A**. (2019). Medical Grade QoS Improvement Using IEEE802.11e WLAN Protocol. In: Al-Masri, A., Curran, K. (eds) Smart Technologies and Innovation for a Sustainable Future. Advances in Science, Technology & Innovation. Springer, Cham. https://doi.org/10.1007/978-3-030-01659-3_26

✔ **Al-Tarawneh, L**.; Taebi, S. Minimizing Blocking Probability in Elastic Optical Networks by Varying the Bandwidth Granularity Based on Optical Path Fragmentation. *Photonics* 2017, *4*, 20. https://doi.org/10.3390/photonics4020020.

✔ **L. Al-Tarawneh** and S. Taebi, "Linear dynamic adaptation of the BW granularity allocation for elastic optical OFDM networks," *2015 International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS)*, 2015, pp. 1-7, doi: 10.1109/SPECTS.2015.7285282.

✔ **L. Al-Tarawneh** and S. Taebi, "Dynamic adaptation of bandwidth granularity for multipath routing in elastic optical OFDM networks," *2015 Conference on Lasers and Electro-Optics (CLEO)*, 2015, pp. 1-2, doi: 10.1364/CLEO_AT. 2015.JTh2A.71.

✔ **L. Altarawneh** and S. Taebi, "Bandwidth granularity adaptation for multipath provisioning in elastic optical OFDM-based networks," *2015 IEEE International Conference on Electro/Information Technology (EIT)*, 2015, pp. 236-240, doi: 10.1109/EIT.2015.7293345.

✔ **L. Al-Tarawneh** and Jamil Ayoub, "Adaptive service differentiation for IEEE 802.11e over medical grade WLAN", International conference biomedical engineering (IASTED). Innsbruck, Austria. Pages (452-458), 16-18 February, 2011.

✔ **L. Al-Tarawneh** and Jamil Ayoub," Enhanced Service Differentiation of Medical Application over IEEE 802.11e WLAN", (7th) JIEEEC conference, pages (101-106), Amman, Jordan,11-14 April 2011.

✔ **Luae' A. Al-Tarawneh** and Jamil N. Ayoub. 2010. Adaptive service differentiation over 802.11e MAC protocol. In Proceedings of the 4th WSEAS international conference on Circuits, systems, signal and telecommunications (CISST'10). World Scientific and Engineering Academy and Society (WSEAS), Stevens Point, Wisconsin, USA, 54–59.

✔ CIVIL DEFENCE Magazine "*E–HEALTH*," issue no.72. Pages (40-41), July 2010.

❖ **Workshops & Training Courses:**

✔ OptiSystem 21 Unveiled: Empowering Photonics Innovations in QKD, Sensors, and Underwater FSO Transmission, organized virtually by Optiwave Systems Inc on October 12, 2023.

✔ Science Diplomacy and the Power of Science to Build Bridges, organized by the Royal Scientific Society (RSS), Amman, Jordan, on September 12, 2023

- ✔ TAIEX Workshop on Artificial Intelligence – Transitioning from Strategy to Execution, organized by Jordan Ministry of Digital Economy and Entrepreneurship, at Grand Hyatt Amman, Amman Jordan, on August 20-22, 2023.

- ✔ Research Ethics and Integrity Practice. Organized by Bulgarian Comparative Education Society (BCES) at Coop Hotel, Sofia, Bulgaria, on June 27, 2023.

- ✔ Teachers staff Mobility at the Technical University of Sofia under ERASMUS+ program, from June 25 to July 2, 2023.

- ✔ 5G Summit 2023, organized by the Arab Advisors Group, at The Ritz-Carlton Hotel, Amman, Jordan, on June 6, 2023.

- ✔ Characteristics of Learners and Interacting with them in Blended and Online Courses, organized by the PSUT e-learning center on March 13, 2023.

- ✔ Future Grid as an Enabler of Decarbonization, organized by the Scientific Research Committee of King Abdullah II School of Engineering/PSUT on March 2, 2023.

- ✔ Theoretical and Practical Training "G650.3 LEVEL 1 SEMINAR FOR TELECOM ENGINEERS": Introduction to Fiber Optics, Visual Fault Locator (VFL), Live Fiber Testing IOLM and OTDR and fiber splicing Machine, organized by ETCOM, on January 6, 2022.

- ✔ Microwave Planning and Design Fundamentals, organized virtually by Mihwar Alibtakar Training Center on Jan16-26, 2022.

- ✔ 4G (LTE) Radio Network (Planning &Optimization) Using ATOLL Tools, organized virtually by Mihwar Alibtakar Training Center, on August 10-19, 2021.

- ✔ "From Entrepreneurship to Start-up" organized virtually by the Erasmus + Program of the European Union on October 5-6, 2021.

- ✔ "Quality Assurance in Higher Education Institutions Workshop" was held by Accreditation and Quality Assurance Commission for Higher Education Institutions (AQACHEI), 15-17 Feb 15-17, 2020 at the University of Jordan.

- ✔ "Strategic planning in higher education programs" organized by PSUT from June 27 to July 18, 2019.

- ✔ Sysmex KX21N hematology, organized by Sysmex Company at United Arab Emirates (UAE) on March 13-18, 2011.

- ✔ ELIZA reader training course, Bio-chrome medical company, Cambridge / UK, Jul 23-28, 2010.

- ✔ EVOLIS training course, organized by Biorad Medical Company, Paris/ France, on August 24-28, 2009.

- ✔ BACT 3 system, organized by Biomeriue Company at Leon/France, on Oct 14-18, 2008.

- ✔ Cooperation fields between medical and engineering staff in the Ministry of health (MOH) in medical instruments fields, organized by Directorate of Biomedical Engineering (DBE) & RSS, Amman, Jordan, on July 19, 2007.

- ✔ Management and planning for preventive maintenance, an international dialog for HR development, organized by RSS, on December 10-14, 2006.

- ✔ MICROM products Model 340E and STP120, organized by Microme international company at Wall Dorf/German, on November 21-22, 2006.

- ✔ ISO 2000 concepts awareness, organized by Quality Consultants at RSS, October 27, 2003.

- ✔ ISO/IEC 17025 field of application and requirements organized by QAD in cooperation with AU & JISM, Amman/Jordan, 8-10 October 2002.

- ✔ Biomedical Technologies: IRM & Artificial Ventilation, organized by UTC Compian University Paris/France, from May 2 - June 28, 2002.

- ✔ Intensive course on acquisition and processing tools for Biomedical Signal Monitoring, organized by Jordan University of Science and Technology, Irbid/Jordan, on March 10-14, 2002.

- ✔ General training course in telecommunication (Switching, RF, Trans/Receiving, power supplies), organized by Jordan Telecommunication Company (JTC), Amman/Jordan from June 1 to August 1, 1999.

❖ **Professional Memberships & Committees: University, National, International & others.**

- ● University, **PSUT:**
  - ✔ Head of the communications Engineering council, 2019- Present.

  - ✔ College Council of King Abdullah II School of Engineering College Council, 2019- Present.

  - ✔ Graduate Studies Committee of King Abdullah II School of Engineering, 2021/2022.

  - ✔ Scientific Research Council committee of King Abdullah II Faculty of Engineering, 2020/2021 and 2022/2023.

  - ✔ Head of the Quality Assurance Committee of the communications engineering department, 2021- Present.

  - ✔ Member of the PEEK-PSUT Engineering Entrepreneurship kickstarter committee of King Abdullah II School of Engineering, 2020/2021

  - ✔ Head of the new master's degree program creation and study plan development committee with the Regional Center for Space Science and Technology Education for Western Asia/United Nations, 2022/2023.

  - ✔ Quality Assurance and development committee of King Abdullah II Faculty of Engineering, 2019 to present.

  - ✔ Member of the committee of development and equipment of a new Internet of things laboratories at the communications engineering department, 2021 to present.

- ✔ Head of an engineering committee for experiments preparing and equipment for the new Internet of things programming and applications laboratory at the communications engineering department, 2021/2022.

- ✔ Head of hiring committee for a new communications engineering laboratory supervisor, 2019/2020.

- ✔ Hiring committee members for new laboratory supervisors in King Abdullah II Faculty of Engineering, 2021/2022.

- ✔ Member of the committee for selecting students representing each college for membership in the provisional student council for the academic year 2022-2023.

- ✔ Member of the college student Affairs committee of king Abdullah II school of engineering, 2021 to present.

- ✔ Member of the committee for interviewing students applying for admission to the King Abdullah II school of engineering at PSUT, 2020/2021 and 2021/2022.

- ✔ Head of the follow-up committee for the communications engineering _IoT program creation of King Abdullah II School of engineering at PSUT, 2020/2021.

- **National Committees:**
  - ✔ An advisory committee in the electrical engineering division / Jordanian Engineering Association (JEA), 2022-Present.

  - ✔ An industrial advisory committee in the Electrical Engineering Department /Faculty of Engineering at the University of Jordan, 2022/2023.

  - ✔ Organizing Committee of the 4th IEEE Middle East & North Africa Communications Conference Advancing the Communication Vision, MENACOM, served as a Technical Program Chair (TPC), 2022.

  - ✔ Organizing Committee of the 2023 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT), served as a Track Chair,2023.

  - ✔ "Higher Education Accredited Assessor" for the Accreditation and Quality Assurance Commission for Higher Education Institutions (AQACHEI), the certificate was issued on 17/2/2020.

- **International Committees Participation: Scientific Societies and Associations:**
  - ✔ IEEE Jordan Communication Society (ComSoc) & SPS Chair, (2024-Present).
  - ✔ IEEE Communication Society, Jordan Chapter, ComSoc Vice-Chair, (2022-2024).
  - ✔ Jordanian Engineering Association (JEA), (1999-Present).
  - ✔ IEEE Membership, (2012-Present)
  - ✔ IEEE Communication Society Membership, (2012-Presnt).
  - ✔ IEEE Photonic Society Membership, (2012-present).

- **Evaluation Committees of Master's thesis defenses of the following theses:**

  ✔ Participation as a member of the Evaluation Committee of the Master's thesis defense: "Performance evaluation of DPSK transdermal wireless optical communication with pointing error" by Yazeed Rbihat at PSUT (August 2022).

  ✔ Participation as an external examiner and a member of the Evaluation Committee of the Master's theses defense of the following theses:

    ○ "Performance Evaluation of Transdermal Optical Wireless Communication Using Diversity Techniques" by Rawan Hani Al-Majdoubah at Al-Ahliyya Amman University (AAU) (January 2023).

    ○ "The Importance of Using Free Space Optical Wireless Communications (FSO) in Backhaul Connectivity for 6G Applications" by Aseel Mahmoud Rwaidi at Mu'tah university January (January 2023).

❖ **Honors, Awards & Recognition**

  ✔ Research Incentives Award at PSUT, 2020, 2021, 2022, and 2023.
  ✔ Teaching Incentives Award at PSUT, 2022.
  ✔ Recognition Letter from the Dean of the King Abdullah II School of Engineering, 2021.
  ✔ Recognition Letter from the Dean of the Deanship of Admissions and Registration, 2021
  ✔ The Honor Society of Phi Kappa Phi Membership, SIUC-2016.
  ✔ Graduate International Students Award, GISA/SIUC-2015.
  ✔ Academic Honor Award, Faculty of Engineering/ Mutah University 1998/1999.

❖ **Languages and Skills:**

  ✔ Languages: Arabic (mother tongue) & English.
  ✔ Skills: ICDL, MATLAB, NS 2.28, Mininet software, VPI Photonics.

❖ **References:**

  Available upon request.