

Curriculum Vitae (CV)

General Information

- **Name:** Jihane Ben Slimane
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Web of Science Researcher ID: KCL-5521-2024
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Academic Qualifications

| Degree | Specialty | Institution | Year |
|--------|--|--|------|
| Ph.D. | Electrical Engineering: Industrial Computer Science and Automation | National Engineering School of Tunis (ENIT), University of Tunis El Manar | 2010 |
| M.Sc. | Industrial Computer Science and Automation | National Institute of Applied Science and Technology in Tunis (INSAT), University of 7th November at Carthage | 2006 |
| B.Sc. | Industrial Automation and Computer Engineering | Higher School of Sciences and Technology of Tunis (ESSTT), University of Tunis | 2004 |

Academic Experience

| Rank | Institution | Title | Duration |
|---------------------|---|--|---------------|
| Assistant Professor | Faculty of Computing and Information Technology, Rafha, Northern Border University, Saudi Arabi | Assistant Professor in Faculty of Computing and Information Technology | 2024- present |
| Assistant Professor | Faculty of Computing and Information Technology, Rafha, Northern Border University, Saudi Arabia | Consultant to the Dean Faculty for Academic Affairs in the Female Section | 2023-2024 |
| Assistant Professor | Faculty of Computing and Information Technology, Rafha, Northern Border University, Saudi Arabia | Vice Dean in Female Section | 2015 –2023 |
| Assistant Professor | Faculty of Computing and Information Technology, Rafha, Northern Border University, Saudi Arabia | Academic Coordinator of Computer Sciences Department | 2014-2015 |

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|---------------------|---|---|-----------|
| Assistant Professor | Preparatory Institute of Engineering Studies, University of Tunis El Manar, Tunisia | Assistant Professor in Engineering Science and Technology | 2010-2014 |
| Lecturer | High Institute of Technology and Applied Sciences of Mateur | Lecturer in Computing | 2005-2010 |

Non-academic Experience

- July 2003: Training in Electricity and Gas Tunisian Society, project preparation on Differential protection of transformers.
- July 2002: Training in Electricity and Gas Tunisian Society, project preparation on the post offices and the conversion stations Design.

Local and International Memberships

- **2024:** Member of the Sub-Committee for Student Preparation in the Networking and Communications Field for Standardized Testing in the Department of Computer Science.
- **2024:** Member of the Sub-Committee for Student Preparation in the Web and Mobile Systems Field for Standardized Testing in the Department of Information Technology.
- **2024:** Member of the Sub-Committee for Student Preparation in the Networking Field for Standardized Testing in the Department of Information Technology.
- **2024:** Reviewer for the Journal of Engineering, Technology & Applied Science Research (ETASR).
- **2024:** Member of the Committee for the Transformation of the Two-Semester System for All Academic Programs in the Department of Computer Science.
- **2024-present:** Member of Lab Committee in the Department of Computer Science.
- **2023-present:** Head of Student Affairs and Equivalencies Committee in the Department of Computer Science.
- **2023-present:** Member of Graduate Studies Committee in the Department of Computer Science.
- **2023-2024:** Member of Community services Committee in the Department of Computer Science.
- **2023:** Participate in the preparation of the NCAAA (National Center for Academic Accreditation and Evaluation). The NCAAA has been successfully approved for FCIT in 2024 in Computer Science, Information Systems and Information Technology programs.
- **2023:** Participate in the preparation of the ABET (Accreditation Board for Engineering and Technology). The renewal of ABET accreditation has been successfully approved for FCIT in 2024 in Computer Science, Information Systems and Information Technology programs.
- **2023:** Member of the Computer Science Program Development Committee.
- **2023:** Member of the committee for developing the cybersecurity program. The Cybersecurity Program at the FCIT has been successfully accredited by the National Cybersecurity Authority in 2024.
- **2022-present:** Member of the Central Examinations Committee.
- **2020-2023:** Member of Student Advisory Council.
- **2019- present:** Member of Research Unit in Computer Sciences and Cyber Security.
- **2018:** Reviewer for research project in Tabuk university.

- **2018-2024:** Member of Statistics and information Committee.
- **2018-2024:** Member of Annual Report Preparation Committee.
- **2018-2024:** Member of Quality Supervisory Committee.
- **2018-2019:** Head of the Robotic Club.
- **2017- 2024:** Member of Strategic Planning Committee.
- **2017-2024:** Member of Curriculum Committee.
- **2017-present:** Head of Student activities Committee.
- **2017- 2024:** Member of Disciplinary Committee for Female Students.
- **2017:** Participate to the preparation of the ABET (Accreditation Board for Engineering and Technology) Visit: Working in Program Educational Objectives, Student Outcomes Establishment, Course Syllabus and Course File. The ABET has been successfully approved for FCIT in 2018 in Computer Sciences, Information Systems and Information Technology programs.
- **2014-present:** Academic advisor.
- **2014-present:** Evaluator for graduate student projects.
- **2014-2017:** Head of Exams Committee.
- **2014-2015:** Member of University Graduate projects Committee.
- **2006-present:** Member of the Analysis, Design, and Control of Systems Laboratory at the National Engineering School of Tunis, University of Tunis El Manar.

Honors and awards

- Certificate of Appreciation from the Dean of the Computing College in recognition of the presentation “Digital forensics as part of preparations to participate in the “Capture the Flag” cybersecurity competition” workshops, 2003-2024.
- Certificate of Appreciation from the Dean of the Computing College in recognition of the presentation “Project management and report writing” workshop, 2003-2024.
- Certificate of Appreciation from the Dean of the Computing College in recognition of the presentation “Cybercrimes” workshop, 2003-2024.
- Certificate of Appreciation from the Dean of the Computing College in recognition of the presentation “Academic Advising and specialty choosing” workshop, 2002-2023.
- Certificate of Appreciation from the Dean of the Computing College in recognition of the presentation “Virtual Reality and Augmented Reality, 2022-2023.
- Certificate of Appreciation from the Dean of the Computing College in recognition of the presentation “Academic Advising session and specialty choosing session” workshop and the outstanding contributions as a Head of the Scientific and Cultural Activities Committee, 2002-2023.
- A certificate of thanks and appreciation from the Deanship of Student Affairs for the outstanding participation in the success of activities and programs at the Northern Border University branch in Rafha during the 2021-2022 school year.
- A certificate of thanks and appreciation from the Vice Dean for Development, Quality and Community Service (the International Accreditation Project team at the College of Computing and Information Technology) for the college programs extension of the international academic accreditation ABET, 2020-2021
- A certificate of thanks and appreciation from the Raoum Association for Orphan Care in Rafha for the outstanding participation in the courses for the computer and the workshop in presentation course, February 16, 2020.
- Honor of Appreciation from the Dean of the Computing College in recognition of the Outstanding Direction, Leadership, and Contribution as the Vice Dean in Female Section,

May 19, 2019.

- Certificate of Appreciation from the Dean of the Computing College in recognition of the presentation “Graduation projects” workshop and the outstanding contributions as a Head of the Scientific and Cultural Activities Committee, December 4, 2018.
- Certificate of Appreciation from the Dean of the Computing College in recognition of the outstanding contributions as the Head of the Robotic club and the achievement of the project of Wireless Controlled Arduino Robot in the academic year 2018-2019.
- Certificate of thanks and appreciation from Northern Border University for the efforts and giving towards the completion of ABET academic accreditation requirements for the College of Computing and Information Technology, December 17, 2017
- Certificate of thanks and appreciation from the Vice Dean for University Studies at the university branch in Rafha for the outstanding participation in organizing the eleventh graduation ceremony for female students at the university branch in Rafha.
- Certificate of Appreciation from the Dean of the Computing College in recognition of the outstanding contributions as a chair of the Exams Committee and as a valuable member in the Strategic Planning Committee in the academic year 2016-2017.
- Faculty Excellence Award in recognition of the outstanding contributions as a faculty member in the Department of Computer Science, May 2015.

Community Services and Volunteering

- Present three workshops on Digital forensics as part of preparations to participate in the “Capture the Flag” cybersecurity competition, 29-30 April 2024, 1st May 2024.
- Reviewer for the Journal of Engineering, Technology & Applied Science Research (ETASR), April 2024
- Present a Workshop on Cybercrimes: December 2023,
- Present a Workshop on Project management and report writing: September 2023,
- Present a Workshop on Virtual Reality and Augmented Reality: February 2023.
- Visit to a Secondary School to sensitize students to choose the specialty for University: December 2022.
- Prepare a Workshop on Cyber Security: February 2020.
- Present Training on Power Point presentations: February 2020
- Program Preparation of Cyber Security Higher Diploma: July 2019.
- Visit to a Secondary School to sensitize students to choose the specialty for University: November 2019.
- Supervision of the project: Wireless Controlled Arduino Robot in Robotic Club: May 2019.
- Present a Workshop on Cybercrimes: October 2019
- Present Trainings on Android: April and March 2019.
- Visit to a Secondary School to sensitize students to choose the specialty for University: April 2018.
- Present training on Information Technology skills (Windows, Word, Excel, Power Point, Access, Internet Explorer): February 2018.
- Present training: How Present Graduate Project: April 2017.

Workshops and Training courses

- Bioethics Online Training Course, 17/04/2024
- Huawei HCIA AI training on the 25th ~29th February, 2024.
- Workshop on How to publish research in Oxford journals within the Saudi Digital Library: 14/02/2024.
- Workshop on How to be an effective Peer Reviewer within the Saudi Digital Library:

14/02/2024.

- Workshop on How to drive the Impact of your Publication within the Saudi Digital Library: 12/02/2024.
- Workshop on Introduction to Publishing in Academic Journals within the Saudi Digital Library: 30/01/2024.
- Workshop on Look beyond the Journal Impact Factor with Journal Citation Reports within the Saudi Digital Library: 24/01/2024.
- Workshop on Digital library information databases and the electronic portal for university library catalogues within the Deanship of E-Learning and Knowledge Resources: 24/1/2024.
- Workshop on Employing e-learning strategies in the Blackboard system within the Deanship of E-Learning and Knowledge Resources: 24/01/2024.
- Workshop on Do Research with Confidence using Web of Science Core Collection within the Saudi Digital Library: 23/01/2024.
- Workshop on Educational infographic from essence to function within the Deanship of E-Learning and Knowledge Resources: 17/01/2024.
- Workshop on Saqr World Classification: 21/12/2023.
- Training program (formulation and measurement of learning outcomes for academic programs) at the Deanship of University Education Development: 22/05/2022
- Workshop on scientific references and their electronic indexing in scientific papers using Mendeley programming: 18/05/2022.
- Scientific Research Ethics Workshop at the Deanship of University Education Development: 20/4/2022
- Workshop for International Classification of Refereed Scientific Journals: 13/04/2022
- Workshop on Eligibility Requirements for Program Accreditation at the Deanship of University Education Development: 22/03/2022.
- Attended 25 hours a workshop relating to Course and program description, course and program report, field experience, on conducted by University Education Development: October 2019.

Conferences Attended / Participated

- 3rd IEEE International Conference on Signal, Control and Communication (SCC 2023), December 2023.
- International Conference on Electrical Systems and Automatic Control (JTEA), Mai 2008.
- International Conference on Electrical Engineering Design and Technologies (ICEED'T), November 2007.

Taught Courses

- Database,
- Network Administration,
- Information Security,
- Internet of Things,
- Wireless Data Networks,
- Computer Architecture and Organization,
- Operating systems,
- Internet Applications,
- Algorithms and Data Structures,
- Computing,
- C Programming,

- JAVA Programming,
- Android Programming,
- Multimedia,
- Circuits Electric Plans,
- Electronics and Automatic Control.
- Supervisor of Graduation projects involving the following platforms and environments: Android Platform (Android Studio, Eclipse), Matlab Environment, Arduino platform, and projects utilizing the Python programming language:
 - Deep Learning-Based Weather Prediction for Rafha Using Long Short-Term Memory (LSTM): 2024,
 - Heart Disease Risk Assessment Using Machine Learning: A Probabilistic Neural Network Approach, 2024,
 - Traffic Lights Simulation for Pedestrians Safety:2024,
 - Restaurant Robot Server: 2023,
 - Smoke and Gas Leakage Detector Using Internet of Things Concepts: 2023,
 - Smart Home Automation using Internet of Things: December 2019,
 - Probabilistic Neural Network for Plant Classification by using Leaves: December 2018,
 - Android Application for Mobile phones reparation: “Technical Clinic”: May 2017,
 - Android Programming from Design to Deployment Add and Remove Subjects Application for Students: May 2015,
 - Development Android Mobile Application: “Teacher Assistant”: December 2015,
 - Learn Android Tutorial Application: December 2014.
- Supervisor of PhD thesis students:
 - Diagnostics and fault-tolerant control (FTC) of Hybrid Dynamic systems, Chalandi Hanene, National Engineering School of Tunis (ENIT), University of Tunis El Manar.
 - Fault diagnosis and fault-tolerant control of complex systems using artificial intelligence techniques, Assadi Khaoula, National Engineering School of Tunis (ENIT), University of Tunis El Manar.

Research Interests

- Cyber security,
- Failures Diagnosis,
- Fault Tolerant Command,
- Signal Processing,
- Artificial Intelligence,
- Neural Networks,
- Machine learning,
- Modeling Systems.

Academic Achievements

- PhD, Thesis Title: Classification Methods for Modeling and Diagnosis Complex System Failures, National Engineering School of Tunis (ENIT), University of Tunis El Manar, February 2010,
- M.S, Thesis Title: Multimodal Approach and Competitive Learning Neural Networks: Application to the modeling of a pilot level control process, National Institute of Applied Science and Technology in Tunis (INSAT), University of 7th November at Carthage, September 2006,

- B.S, Control of an Electrohydraulic System, Higher School of Sciences and Technology of Tunis (ESSTT), University of Tunis, 2004.

Publications

- Advanced Convolutional Neural Network and Long Short-Term Memory Model for Real-Time Spam Detection in Internet of Things Devices, Journal of Electrical Systems (JES), October 2024, Vol.6. No. 10s, pp. 6114-6135.
- Proactive cyber defense and forensic investigation techniques for drone operation: a holistic approach, Journal of Theoretical and Applied Information Technology (JATIT), September 2024, Vol.102. No. 18, pp.6697- 6709.
- Deep hybrid neural networks for prediction missing segments in sEMG time series data. International Journal on Information Technologies and Security (IJITS), September 2024, vol.16, no.3, 2024, pp. 37-48. <https://doi.org/10.59035/PYMN1827>.
- Efficient Real Time Zynq 7000 FPGA Deployment of Optimized YOLOv2 Deep Learning Model Based on HDL Coder Methodology, International Journal on Information Technologies & Security (IJITS), June 2024, Volume 16, Issue2.
- Towards a Unified Formalization of Opacity Properties in Discrete and Real-Time Systems, Journal of Theoretical and Applied Information Technology (JATIT), 31 May 2024, Vol 102, Issue 10.
- Securing the Industrial Backbone: Cybersecurity Threats, Vulnerabilities, and Mitigation Strategies in Control and Automation Systems, Journal of Electrical Systems (JES), 13 May 2024, Volume 20, Issue 7s, pages 1111-1120.
- Adaptive Method for Feature Selection in the Machine Learning Context, Engineering, Technology & Applied Science Research (ETASR), published online on 16 April 2024, June 2024, Volume 14, Issue3, pages 14295-14300.
- A Novel Approach of Traffic Congestion and Anomaly Detection with Prediction Using Deep Learning, Journal of Electrical Systems (JES), 7 April 2024, Vol. 20 No. 3s.
- Intrusion Detection using Network Traffic Profiling and Machine Learning for IoT, Journal of Electrical Systems (JES), 7 April 2024, Vol. 20 No. 3s.
- Deep Learning for Real-Time Affective Hand Gesture Recognition in EMASPEL, International Journal of Recent Technology and Engineering (IJRTE), 30 March 2024, Volume 12, Issue 6.
- Predicting Knee Osteoarthritis Progression: A Multimodal Approach Integrating Unadorned Radiographs and Medical Data for Enhanced Machine Learning, International Journal of Intelligent Systems and Applications in Engineering (IJISAE), 26 March 2024, Vol. 12, Issue No. 21s, pages 2127–2137.
- An NLP-Based Approach to fortifying Cyber Defenses, International Journal of Intelligent Systems and Applications in Engineering (IJISAE), 24 March 2024, Vol. 12 No. 18s
- Deep Learning for Tomato Disease Detection with YOLOv8, Engineering, Technology & Applied Science Research (ETASR), published online on 7 March 2024, April 2024, Volume 14, Issue2, pages 13584-13591.
- Model-based Design of a High-Throughput Canny Edge Detection Accelerator on Zynq- 7000 FPGA, Engineering, Technology & Applied Science Research (ETASR), published online on 3 March 2024, April 2024, Volume 14, Issue2, pages 13547-13553.
- Efficient Hardware Accelerator and Implementation of JPEG 2000 MQ Decoder Architecture, Engineering, Technology & Applied Science Research (ETASR), published online on 29 February 2024, April 2024, Volume 14, Issue2, pages 13463-13469.

- A Framework for Efficient and Accurate Automated CLO and PLO Assessment, Engineering, Technology & Applied Science Research (ETASR), published online on 19 February 2024, April 2024, Volume 14, Issue2, pages 13362-13368.
- An Intelligent Multimodal Emotion Recognition System for E-Learning, October 2023, International Journal on Recent and Innovation Trends in Computing and Communication (IJRITCC), ISSN: 2321-8169 Volume: 11 Issue: 10, pages 2847 – 2852.
- Application of Extreme Learning Machine for Shunt Faults Detection and Classification in Three-phase Transmission Line Systems, at the IEEE 3rd International Conference on Signal, Control and Communication, SCC 2023, Tunisia, 2 December 2023.
- Shunt faults detection and classification in electrical power transmission line systems based on artificial neural networks, COMPEL - The International Journal for Computation and Mathematics in Electrical and Electronic Engineering, Vol. 42 No. 6, pp. 1518-1530, 5 April 2023, ISSN: 0332-1649, <https://doi.org/10.1108/COMPEL-10-2022-0371>.
- A Fault Tolerant Control for Sensor and Actuator Failures of a Non-Linear Hybrid System, the International Journal of Electrical and Computer Engineering (IJECE), Vol.8, No.5, October 2018, pp. 2864~2882, ISSN: 2088-8708.
- Classification Methods based on Pattern Recognition and on Neural Networks for Failure Detection: International Review on Computers and Software (IRECOS), Vol. 5. n. 3, May 2010, pp. 257-263, ISSN: 1828-6003, eISSN: 2533-1728.
- Supervised and Unsupervised Neural Classification for Multimodal Modeling of Complex Systems: International Reviews on Modeling and Simulations (IREMOS), Vol. 2. n. 5, October 2009, pp. 498-506, ISSN: 1974-9821, eISSN: 2533-1701.
- Support Vectors Machines for Failures Diagnosis: International Reviews of Automatic Control (IREACO), Vol. 2. n. 5, pp. 505-511, September 2009, ISSN: 1974-6059, eISSN: 2533-2260.
- Classification by the Probabilistic Neural Networks PNN and experimental validation of two validity calculation approaches, International Conference on Electrical Systems and Automatic Control (JTEA) with the collaboration of the Association of the Electrician Specialists of Tunisia "ASET" & IEEE France Section, Mai 2008.
- Probabilistic Neural Networks for the determination of model library: International Conference on Electrical Engineering Design and Technologies (ICEED'T), November 2007.