CURRICULUM VITAE

NAJOUA KOUKA _____

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Ph.D, Computer Science and Engineering
REGIM-Lab.: REsearch Groups in Intelligent Machines, University of Sfax, National
Engineering School of Sfax (ENIS), BP 1173, Sfax, 3038, Tunisia

RESEARCH INTERESTS _____

Problem optimization, Evolutionary computation, Particle Swarm Optimization, Multi Agent
System, Machine Learning, Deep learning

EDUCATION _____

2017-2023:	Ph.D, Computer Science and Engineering, (ENIS – Ecole Nationale des Ingenieurs de Sfax - the National College of Engineers at Sfax) "Multi/Many objective Particle Swarm Optimization with Cooperative Agents approachs: Case Study on EEG Channel Selection"
2013-2015:	Engineering of Computer and Multimedia Technology Web, Higher Institute of Computer Science and Multimedia.
2012-2013:	Master 1 of Software Engineering, ISIMM (Institut Supérieur d'Informatique et de Mathématiques de l'Université de Monastir- Higher Institute of Computing and Mathematics of the University of Monastir)
2009-2012:	Bachelor of Computer Science ISIMM (Institut Supérieur d'Informatique et de Mathématiques de l'Université de Monastir- Higher Institute of Computing and Mathematics of the University of Monastir)

GRADUATION _____

- Mai 2023: Ph.D. in Computer Science and Engineering
- June 2015: Engineer Degree in Computer Science and Multimedia
- June 2012: Bachelor of Computer Sciences
- June 2009: Baccalaureate Certificate in Computer Sciences

CERTIFICATION _____

- November 2024: Nvidia Certificate "Generative AI with Diffusion Models"
- 10 February- 17 February 2021: Certificate de formation «Machine Learning» (An online non-credit course authorized by deeplearning.ai and offered through Coursera)
- June 2020: Certificat de formation «Neural Networks and Deep Learning» (An online non-credit course authorized by deeplearning.ai and offered through Coursera)
- June 2020: Certificat de formation « Machine Learning Foundations: A Case Study Approach (A MOOC from the University of Washington and offered through Coursera)
- 02 May. 2019 Attendance Certificate Training Course « Smart Cities Challenges » Research association Pro-DidacTIC and DONA foundation, Mahdia, Tunisa
- 14 February 2016   Attendance Certificate « After Effect » Higher Institute of Computing and Mathematics of the University of Monastir, Tunisia
- 20 December 22 December 2015 Certificate of « English Training in Reading and Writing Scientific Papers » SETIT Sfax, Tunisia
- 20 December. 22 December. 2015   Attendance Certificate « LATEX » SETIT Sfax, Tunisia
- 8 December. 2015 Attendance Certificate « Paper Publication »National Engineering School of Sfax (ENIS), Tunisia
- April-Mai 2015: Certificate in English of Business Communication
- Mai- June 2014 : Certificate in JAVA Programming

AWARDS AND SCHOLARCHIPS_____

- Certificate of Winner: Outstanding participation and honorable achievement to the 7th IDSS (Intelligent Decision Support Systems) 2022 COVID-19 AI Detection Challenge: First place
- Scholarship of IEEE CIC 2021 for supporting the project "EEG Channel Selection-based Binary Particle Swarm Optimization with Recurrent Convolutional Autoencoder for Emotion Recognition"(https://cis.ieee.org/activities/educational-activites/research-grants)
- Scholarship of EU for supporting 3 months internships at LISSI laboratory, France Registration Grant of IEEE CEC 2020 Paper: "Dynamic Multi-Objective Particle Swarm Optimization with Cooperative Agents"

TRAINING_____

- July- August 2021 : Research internship in « Laboratoire Images Signaux et Systèmes Intelligents (LISSI), Université Paris Est Créteil (UPEC) » with Pr. Patrick Siarry (siarry@u-pec.fr)
- September 2021 : Research internship in « Laboratoire Images Signaux et Systèmes Intelligents (LISSI), Université Paris Est Créteil (UPEC) » with Pr. Patrick Siarry (siarry@u-pec.fr)
- September- December 2020 : Research internship in « Laboratoire Images Signaux et Systèmes Intelligents (LISSI), Université Paris Est Créteil (UPEC) » with Pr. Patrick Siarry (siarry@u-pec.fr)
- June 2015: Design and development of an ERP module entitled "Production management " in the application development company Pinkoo Soft computer in Mahdia-Tunisia
- February-June-2015: Design and development of an experiential learning platform in the medical field within the company WEGO Mahdia-Tunisia
- June-Jully-2013: At the Laboratory of Technology and Medical Imaging of the Faculty of Medicine Monastir-Tunisia
- February-June 2013: Server Design and development of a Complaint management system with JAVA/ Android, at the company Tunisia Telecom Sousse-Tunisia

CONGRESS AND SEMINAIRE_____

- October 31- 03 2024 November: Certificate of participation in Summer School on Generative Artificial Intelligence, Monastir, Tunisia.
- July 9-12 2023: Certificate of Appreciation in organizing the 28th IEEE Symposium on Computers and Communications (IEEE ISCC 2023) Gammarth – Tunisia
- December 18-20, 2022 35th Workshop on Intelligent Machines: Theory & Applications Of ReGIM-Lab (35th WIMTA), Sousse, Tunisia
- July 15 – 17 2022, 1st International Conference on Information Technology & Smart Industrial Systems ITSIS2022, Virtual Meeting
- December 29, 2021: 34th Workshop on Intelligent Machines: Theory & Applications Of ReGIM-Lab (34th WIMTA), Sfax, Tunisia
- March 17-18, 2021: 33th Workshop on Intelligent Machines: Theory & Applications Of ReGIM-Lab (33th WIMTA), Sfax, Tunisia
- Jul 19- 24, 2020, Poster presentation at the IEEE CEC entitled: "Dynamic Multi-Objective Particle Swarm Optimization with Cooperative Agents", Virtual Meeting
- January 16, 2016, Attendance Certificate « Training on scientific research indicators», Sfax, Tunisia
1. October 28-30, 2016: Oral Presentation at the Applied Computing Conference 2016, entitled: "A new Architecture-based Distributed Agents Using PSO for Multi-Objective Optimization", Virtual Meeting

WORK EXPERIENCE

November 2023 – November 2026 – Milano, Italy
Assistant Researcher– Universita' degli Studi di Milano, Dipartimento di Informatica, Via Celoria 18, 20133 Milano, Italy

September 2022 – January 2023 – Mahdia, Tunisia
TEMPORARY TEACHER – Higher Institute of Computer Science of Mahdia-Tunisia

PUBLICATIONS

- Najwa Kouka, Vincenzo Piuri, and Pierangela Samarati. Tasks Scheduling with Load Balancing in Fog Computing: a Bi-level Multi-Objective Optimization Approach. In Proceedings of the Genetic and Evolutionary Computation Conference (GECCO '24). Association for Computing Machinery, New York, NY, USA, 538–546, 2024.
- Rahma Fourati, Jihene Tmamna, Najwa Kouka, Mandar Cogate, Kia Dashtipour, Leandro A. Passos, Joao P. Papa, Amir Hussain. AVSE-Pruner: Filter Pruning of Audio-Visual Speech Enhancement System using Multi-objective Binary Particle Swarm Optimization. In 3rd COG-MHEAR Workshop on Audio-Visual Speech Enhancement (AVSEC), 24-29, 2024
- Najwa Kouka, Rahma Fourati, Asma Baghdadi, Patrick Siarry, and A.M. Alimi, mutual information-based many-objective optimization method for EEG channel selection in the epileptic seizure prediction task. Cognitive Computation 2024.
- Najwa Kouka, Rahma Fourati, Raja Fdhila, Patrick Siarry, and and A.M. Alimi, A EEG channel selection-based binary particle swarm optimization with recurrent convolutional autoencoder for emotion recognition,Biomedical Signal Processing and Control, (84),2023.
- Najwa Kouka, Fatima BenSaid, Raja Fdhila,Rahma Fourati, Amir Hussain, and Alimi, A. M. A Novel Approach of Many-Objective Particle Swarm Optimization with Cooperative Agents based on an Inverted Generational Distance Indicator. Information Science journal, 2023.
- Najwa Kouka, Raja Fdhila, Amir Hussain, and A. M Alimi, Dynamic Multi Objective Particle Swarm optimization with Cooperative Agents, 2020 IEEE Congress on Evolutionary Computation (CEC), Glasgow, United Kingdom, 2020, pp. 1-8.
- Najwa Kouka, Raja Fdhila, and A. M Alimi (2017) Multi Objective Particle Swarm Optimization Based Cooperative Agents with Automated Negotiation. In : Liu D., Xie S., Li Y., Zhao D., El-Alfy ES. (eds) Neural Information Processing. ICONIP 2017. Lecture Notes in Computer Science, vol 10637. Springer, Cham.
- Najwa Kouka, Raja Fdhila, and A. M Alimi : A new Architecture-based Distributed Agents Using PSO for Multi-Objective Optimization. 13th International Conference on Applied Computing, (2016).

KNOWLEDGE & SPECIAL SKILLS_____

- Development language: Python, Java| J2EE
- Python frameworks (Pandas, Numpy, Scikit-learn, Scipy), Jupyter Notebook, Matplotlib
- Tensorflow/Keras, Pytorch
- Recurrent neural networks (LSTM, ConvLSTM)

LANGUAGE _____

- **French**: Read, spoken and written.
- **English**: Read, spoken and written.
- **Arabic**: Mother Tang.

CENTER OF INTERESTS _____

- Deep neural network
- Deep neural network compression (Pruning-Quantization)
- EEG based emotion recognition
- EEG based seizure prediction
- Teaching, Training, web/mobile programming, personal development and reading