

# Islem Bejaoui, Ph.D.



Date of birth: [REDACTED]

Country: [REDACTED]. Residence: [REDACTED]









## Employment History

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



- January 30th – April 30th, 2023 ■ **Top Talent Program**, at Msg Global Solutions, Messina, Italy. I attended and successfully completed the training sessions and practical tasks for Sap PaPM to be an associate consultant for business analytics. During the training period, I understood the client requirements, defined the initial concepts, and implemented PaPM including data, modelling, processing, and reporting.
- September, 2018 – April, 2019 ■ **Internship**, at LIRMM (Erasmus student), Montpellier, France. I worked on the Internal Model Control of an Underactuated Systems based on Novel Virtual Inputs Method; inertia wheel inverted pendulum.
- 2015 – 2016 ■ **Teacher**, at Ecole Nationale d'Ingénieur of Carthage, ENI-CARTHAGE. Semester 2: Responsible for the practical work of the Module Programmable automaton of the 3rd year class Electrical engineering.
- 2014 – 2015 ■ **Internship**, at National Engineering School of Tunis, ENIT, LARA. Automatic Lab. Research master memory: Internal model control: frequency case.
- Feb. – June 2013 ■ **Internship**, at SAGEMCOM. The title of this project is "Study, design and realization of an intermediate card for protection of the CPU board of the EPM Premium brewing machine and of a temperature control board of the preheating zone". In the first phase, we analyzed the Premium wave failure modes using several quality management tools such as FMEA machine, Pareto and Ishikawa law or cause-effect diagram. In the second phase we designed the solutions chosen on ISIS: Design of a first CPU board I / O protection board and a second regulation board for the Premium wave preheating zone.
- May – Aug. 2012 ■ **Internship**, at Tunisair Tech. Construction and realization of a test bench of the control box NAV Control panel of the Boeing 737-500 in the framework of a project of integration of avionics equipment.
- July 2011 ■ **Internship**, at Ennakl. Initialization to the field of automotive mechanics. End of studies' project. GEIMM: General Equipment Imaging and Maintenance. Theoretical study of the methods of digitization of radiological devices.

## Education



- 2019 – February 21st, 2022  **Ph.D., Cyber physical systems XXXIV cycle**, University of Messina.  
Thesis title: *Intelligent Monitoring and Remaining Useful Life Estimation of Industrial Systems* .
-  **Ph.D., Electrical Engineering**, National Engineering School of Tunis, ENIT.  
Thesis title: *Contribution by new internal model control approaches to control discrete non-square multivariable systems*.
- 2014 – 2015  **Student** at National Engineering School of Tunis, ENIT.  
*Master of Research in Automatic Control and Signal Processing (ATS)*.
- 2010– 2013  **Student** at National Engineering School of Carthage, ENICARTHAGE.  
*National Diploma of Engineer in Mechatronics*.
- 2007– 2010  **Student** at Higher Institute of Medical Technologies of Tunis.  
*University Diploma of Technology in Biomedical Maintenance of Tunis. Specialty: Medical Imaging*.
- 2005– 2007  **Student** at Carthage Hannibal high School, Tunisia.  
*National Diploma of Baccalaureate, Experimental Sciences*.

## Research Publications

### Journal Articles

- 1 Mahmoud, I., Saidi, I., & Bejaoui, I. (2022). Internal model control using artificial neural networks for linear minimum phase systems. *Przeglad Elektrotechniczny*, 98.  doi:10.15199/48.2022.02.09
- 2 Saidi, I., Bejaoui, I., & Xibilia, M. (2021). A novel discrete internal model control method for underactuated system. *Interdisciplinary Description of Complex Systems*.  doi:10.7906/indecs.19.4.8
- 3 Bejaoui, I., Bruneo, D., & Xibilia, M. (2021). Remaining useful life prediction of broken rotor bar based on data-driven and degradation model. *Applied Sciences*, 11, 7175.  doi:10.3390/app11167175
- 4 Saidi, I., Bejaoui, I., Xibilia, M., & Soudani, D. (2019). Internal model control of discrete non-minimum phase over-actuated systems with multiple time delays and uncertain parameters. *JOURNAL OF ENGINEERING SCIENCE AND TECHNOLOGY REVIEW*, 12.  doi:10.25103/jestr.122.16
- 5 Saidi, I., Bejaoui, I., & Soudani, D. (2017). Internal model control of mimo non-square discrete systems: Design and stability analysis. *International Journal of Control Theory and Applications*.

### Conference Proceedings

- 1 Bejaoui, I., Xibilia, M., & Bruneo, D. (2021). Remaining useful life prediction based on degradation model: Application to a scale replica assembly plant. In *4th international conference on intelligent robotics and control engineering (irce)* (pp. 66–72). IEEE.  doi:10.1109/IRCE53649.2021.957100
- 2 Bejaoui, I., Bruneo, D., & Xibilia, M. (2020). A data-driven prognostics technique and rul prediction of rotating machines using an exponential degradation model. In *7th international conference on control, decision and information technologies (codit)* (pp. 703–708). IEEE.  
 doi:10.1109/CoDIT49905.2020.9263930

- 3 Bejaoui, I., Saidi, I., & Soudani, D. (2018). Internal model control of mimo discrete under-actuated systems with real parametric uncertainty. In *International conference on advanced systems and electric technologies (icaset)* (pp. 308–314). IEEE. [doi:10.1109/ASET.2018.8379874](https://doi.org/10.1109/ASET.2018.8379874)
- 4 Bejaoui, I., Saidi, I., & Soudani, D. (2017). Internal model control of mimo discrete under-actuated systems via squaring matrix transforms. In *Proceedings of engineering and technology-pet* (pp. 10–14).
- 5 Bejaoui, I., Saidi, I., & Soudani, D. (2016). New internal model controller design for discrete over-actuated multivariable system. In *2016 4th international conference on control engineering & information technology (ceit)* (pp. 1–6). IEEE.

## Books and Chapters

- 1 Saidi, I., Bejaoui, I., & Karmani, N. (2021). Nonlinear internal model control based neural networks: Application to mimo non-square systems. (Chap. 3, Vol. 4, pp. 105–111). *Novel Perspectives of Engineering Research*.

## Skills

Languages	<ul style="list-style-type: none"> <li>📌 <b>Arabic:</b> native language.</li> <li>📌 <b>French:</b> second native language.</li> <li>📌 <b>English:</b> Advanced reading, writing and speaking competencies.</li> <li>📌 <b>Italian:</b> Intermediate in reading, writing and speaking competencies.</li> </ul>
Coding	📌 Python, Matlab, STM32, MikroC, VHDL, C, C++, basics of Bash scripting
Database	📌 MySQL, InfluxDB
Software platform	📌 SAP PaPM (Profitability and Performance Management)
Modelling	📌 Simulink, Solidworks, PSIM, Catia
Misc.	<ul style="list-style-type: none"> <li>📌 Predictive and smart Maintenance of Complex Engineering Systems.</li> <li>Remaining useful lifetime estimation.</li> <li>Prognostics and health management (PHM) of industrial systems.</li> <li>Health indicators construction using machine learning and statistics models.</li> <li>Predictive modeling and machine learning.</li> <li>Programmable logic controllers, industrial technology.</li> <li>Implementation, design and testing of electronic boards.</li> <li>Regulation of industrial processes.</li> <li>Operation of actuators and sensors using an on-board control system.</li> <li>Analysis, modeling, identification and Control of industrial systems.</li> <li>Robotics: handling, control and resolution of classical problems.</li> <li>Power electronics, control of electrical machines.</li> <li>Engineering of electrical installations, electrical networks HT / BT.</li> <li>Wiring of electric motors.</li> <li>Knowledge of installation of wind turbines, photovoltaic panels, solar panels.</li> <li>Knowledge of the basics of Cisco NSO.</li> <li>Knowledge of the basics of Linux.</li> </ul>





## Miscellaneous Experience

### Certifications

- 2021
- 📌 **Certificate of attendance.** Summer school on Data-Driven Predictive Maintenance for Industry 4.0. Awarded by Halmstad University.
  - 📌 **Udemy Certificate.** Certificate in Learn Python Programming Masterclass.

## Miscellaneous Experience (continued)

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- 2020  **Coursera Certificate.** Certificate in Launching into Machine Learning.
-  **Certificate of attendance.** MATLAB Campus-Wide. Awarded by the University of Messina.
- 2012  **Certificate of attendance.** Intermediate training STM32. Awarded by STMicroelectronics.
-  **Certificate of attendance.** Basic training STM32. Awarded by STMicroelectronics.