

CONTACT INFORMATION	National Institute of Applied Sciences and Technology INSAT at the University of Carthage Department of Physics and Instrumentation <i>E-mail:</i> Jawhar.Ghommam@etsmtl.ca	<i>Phone:</i> (216)-2626-9813 <i>Fax</i> : (216)-7170-4329
PERSONAL DATA	Tunisian, born July 22, 1979	
CURRENT POSITION	Associate Professor, IEEE Memebre, Eng., Ph.D., HDR., Control- and Computer Engineering, Department of Electrical and Control Engineering, National Institute of Applied Sciences and Technology, Associate Researcher, Advanced control and navigation of robotic systems, GREPCI Lab at the ETS Canada.	
RESEARCH INTERESTS	Robotics, Robot Control, Adaptive Control, Passivity, Observer design, Motion planning for autonomous vehicles, Coordination motion, Formation Algorithms, Real-time Implementation.	
EDUCATION	Habilitation in Control and Computer Engineering National Engineering School of Sfax , BP. 11733038, Sfax, Tunisia. Dissertation Title: Topics In formation Motion Control of Mobile and Marine Vehicles Committee: N. MSirdi, N. Derbel, F. Ben Amar, A. Alimi, M. Feki. CEM-Lab, Sfax 2014. PhD in Control and Computer Engineering The thesis is conducted in joint collaboration of the National Engineering School of Sfax and the University of Orléans: National Engineering School of Sfax , BP. 11733038, Sfax, Tunisia. University of Orléans , BP 6749, 45067 Orlans cedex 2, France. Thesis title: Control and Navigation of Underactuated marine vehicles. Advisors: Professors Faiçal Mnif and Gérard Poisson. Committee: R. Abdennour, N. Derbel, M. M'Saad, G. Poisson and F. Mnif Qualification: " <i>Trés honorable avec félicitations du jury.</i> " (cum laudae) ICOS, Sfax and Institute Prisme, France, January 2009. Master of Engineering in Control and Micro-Electronics Systems The University of Montpellier II , 161 rue Ada 34392 Montpellier Cedex 5, France.	

Thesis title: Dynamic parameters identification for a parallel robot I4R.

Advisor: Professor F. Pierrot

LIRMM, France, June 2004.

B.Sc. in Control and Computer Engineering
The National Institute of Applied Sciences and Technology, Centre Urbain Nord BP 676 -1080 Tunis Cedex, Tunisia.

Main project: Path planning for an industrial tricycle-mobile robot

With Honors in Engineering

Control specialization (emphasis on Control and Robotics)

INSAT, Tunis, January 2003.

TEACHING

Throughout my career as an assistant professor, I have been charged with several courses at both undergraduate and graduate levels in the fields of control engineering, robotics, measurements and instrumentation. The aim of my teaching was to endow the students a solid basic engineering education, but not training for specific tasks only. The main motivation for teaching such engineering material was to enlarge the spectrum of theories in many different areas of the engineering to enable students improving their chances of future specialization and development. On the other hand, I have been involved in many lab work throughout the lectures I've been giving in order to provide practical experience to the students so as to make them competitive in the professional job market.

Courses Taught

- Data Acquisition and Control Interface
- Discrete Systems and Design
- Digital Circuits II
- Linear Systems Theory
- Digital Control Engineering
- Robotics I
- Robotics II
- Automation in Bio-Industry
- Computer Science in Industry

ACADEMIC EXPERIENCE

École de Technologie Supérieure ETS,
University of Québec, Canada

Professor Visitor

From Jul 2011 to Aug 2013

Three Dimensional Control of Quadrotors

Universitat de les Illes Balears,
Palma (Illes Balears), Spain

Academic Visitor

From 15 Oct to 15 Nov, 2011

Formation control of a group of underwater vehicles

École de Technologie Supérieure ETS,
University of Québec, Canada

Post-doctoral fellow

From Sep 2010 to Sep 2011

Swarms of Heterogeneous Autonomous Vehicles: Cooperative Strategies between Mobile Robots and UAVs.

The National Institute of Applied Sciences and Technology ,
University of Carthage, Tunisia

(tenure position; Teaching Assistant)

June 2006 to June 2008

1. Responsible for teaching: Data Acquisition and Control Interface (February 2006 to February 2007)
2. Responsible for teaching: Discreet Systems and Design (September 2006 to September 2008)
3. Responsible for teaching: Digital Circuits II (September 2007 to September 2008)

(tenure position; Assistant Professor)

June 2008 to present

1. Engineering System Analysis (September 2009 to Present)
2. Data Acquisition and Control Interface (September 2009 to Present)
3. Robotics (September 2010 to January 2011)
4. Electric circuit to present (since September 2011)

The Higher School of industries and Agriculture of Tunis ,
Alain Savary, 1003 Tunis El Khadra, Tunisia

(contractual; Assistant Professor)

September 2007 to September 2009

1. Responsible for teaching: Linear Systems Theory (September 2007 to present)
2. Responsible for teaching: Digital Control Engineering (January 2008 to present)

The Higher Institute of Informatics of Tunis ,
2 Rue Abou Rayhan al Bayouni, 2080 Ariana, Tunisia

(contractual; Assistant Professor)

September 2008 to 2009

1. Responsible for teaching: Elementary and advanced courses on Robotics (September 2008 to January 2009)

Université Libre of Tunis, ULT ,
2 Rue Abou Rayhan al Bayouni, 2080 Ariana, Tunisia

(contractual; Assistant Professor) **September 2009 to January 2010**

1. Responsible for teaching: Robotics and Control Dynamic (September 2009 to January 2010)

SUPERVISORY

With the acquired experience in research, I found my self full of ideas and need to put them in practice. Being the sole person being able to canalize this flow of ideas into different projects, would not make research progress with giant speed, I therefore realized that alone cannot make it through, the necessity to involve other motivated persons and assign them projects on this respect would make research valuable and new setting of topics may arise in consequences. Therefore, since I am a senior member of the CEM-Lab, (formerly, the Research Unit on Intelligent Control and Optimization of Complex Systems (ICOS)) and cooperator with the Ecole de Technologie Supérieure (ETS) in Canada, I have been delighted thanks to Professor Nabil Derbel and Professor Maarouf Saad, to co-advise up to three master thesis and three PhD students on different field of control engineering. The topics and candidates of the PhD and master thesis are in order:

PhD

- Alaa Chabir, "Advanced nonlinear control of trirotor arial vehicle", CEM-Lab: Control & Energy Management, Tunisia. On going.
- Walid Chebbi, "Mechanical design and control of crawling cutting trees robot", Ecole Nationale d'Ingénieur de Tunis. On going.
- Sabri Ben Mansour, "Visual navigation of Segway-inverted type pendulum", Ecole Nationale d'Ingénieur de Tunis. On going.
- Manel Taktak, "Neural network robust control of Hard drive discs", CEM-Lab: Control & Energy Management, Tunisia. Defense scheduled for June 1, 2014.
- Yassine Bouterra, "Synchronization Control of multiple manipulators agent systems", CEM-Lab: Control & Energy Management, Tunisia. Defended on December 2011.
- Hasan Mehrjerdi, "Motion coordination of a team of mobile robots", GREP-CI-Groupe de recherche en lectronique de puissance et commande industrielle ,ETS-Canada. Defend on December 2010.

Master thesis

Master thesis project, 2006–2007

- Abdessatar Feki, "On the Localization of an experimental marine craft", ICOS-Intelligent control and optimization of complex system, Tunisia

Master thesis project, 2008–2009

- Manel Taktak, "Manoeuvring control of a second order Nomoto ship through a modified line of sight (LOS)", ICOS-Intelligent control and optimization of complex system, Tunisia

Master thesis project, 2010–2011

- Asma Ben Mansour, "MPC-based synchronization control of multiple Lagrangian systems", ICOS-Intelligent control and optimization of complex system, Tunisia

PROFESSIONAL ACTIVITIES I am actively involved in the organization of the IEEE SSD conference organized by the university of Tunisia-Sfax of which I am a member of scientific committees. I serve also as a referee for several journals in the area of robotics and control.

International Conferences:

- General Chair Conference on Systems, Analysis & Automatic Control (SAC) '13th IEEE International Conference on Signals, Systems and Devices, Sousse, Tunisia. **Mars 2015**
- Program Chair Conference on Systems, Analysis & Automatic Control (SAC) '10th IEEE International Conference on Signals, Systems and Devices, Sousse, Tunisia. **Mars 2013**
- Program Chair Conference on Systems, Analysis & Automatic Control (SAC) '8th IEEE International Conference on Signals, Systems and Devices, Sousse, Tunisia. **Mars 2011**
- Program Chair Conference on Systems, Analysis & Automatic Control (SAC) '7th IEEE International Conference on Signals, Systems and Devices, Jordan, Oman. **Mars 2010**
- Program Chair Conference on Systems, Analysis & Automatic Control (SAC) '6th IEEE International Conference on Signals, Systems and Devices, Djerba, Tunis. **June 2009**
- Program Co-chair Conference on Cooperative Control, IEEE European Control Conference, ECC'2009, Budapest, Hungary. **August 2009**

Referee for International Journals:

- IEEE Transactions on Control Systems Technology
- IEEE Transactions on Industrial Electronics
- IEEE Transactions on Robotics and Automation
- IEEE Transactions on Ocean Engineering
- IEEE Transactions on Mechatronics
- IET Control Theory and Applications
- Robotics & Autonomous Systems, Elsevier
- Control Engineering Practice, Elsevier
- Oceans Engineering, Elsevier
- Communications in Nonlinear Science and Numerical Simulations, Elsevier
- Mechatronics, an International Journal, Elsevier

- Asian Journal of Control, Wiley

I am currently involved, with the ministry of environment-Tunisia to enhance the development regarding environmental monitoring and surveillance systems. With the aid of the (Association de la nanotechnologie pour l'environnement) we cooperatively work toward developing novel water environmental monitoring system based on wireless bio-/nano-sensors network.

Expert evaluator for

- ANpE (Association de la Nanotechnologie pour l'Environnement) **2009–2014**

GRANTS AND PROJECTS

Co-Author of the proposal for collaboration project between The Research Unit ICOS-Tunisia and the university of the **Illes Balears**-Spain. The Proposal accepted for the period 2008–2010 by the cooperation program of the Spain council. Participants: Prof. Calvo Ibanez Oscar, Dr. Jawhar Ghommam, Prof, Alejandro Rozenfeld.

- **Research topic:** The research project has been a successful project funded by the cooperation program of the Spain council. The project generated a new control architecture integrating distributed sensing, realtime image processing and autonomous, fault-tolerant navigation techniques. The cooperation of the underwater vehicles was essential to achieve maximum functionality, autonomy whilst keeping the operational overhead at a minimum.

Co-Author of the proposal for the DCOP Spain collaboration project **Illes Balears**-Spain. The Proposal accepted for the period 2010–2011 by the cooperation program of the Spain council. Participants: Prof. Alejandro Rozenfeld, Prof. Gerardo Acosta and Dr. Jawhar Ghommam.

- **Research topic:** The research project has been a successful project funded by the cooperation program of the Spain council. The project aims at designing new cooperative controllers for the path following of a fleet of autonomous marine craft. The key concept of the cooperative controllers relies on bringing intelligence to the behavior of the agents in the group so they can manage their positions to circumvent restricted passages through narrow tunnel or avoiding obstructing objects.

Participation in a bilateral project CMCU with the university of Orleans France. The Proposal accepted for the period 2009-2010 by the the Tunisian Research council and the French Council for Scientific Research.

- **Research topic:** The project proposes different schemes for coordination motion of a group of mechanical systems, particularly Robot manipulators in order to increase the product quality, production rate and total system cost.

Participation in a collaboration project Tunisia-Canada 2009–2011. Coordinator: Prof. Maarouf Saad from the Quebec University, The Department of Electrical Engineering at the Ecole de Technologie Supérieure (ETS).

- **Research topic:** : The main goal of the project is to achieve a first level of distributed "intelligence" through dependable embedded systems that are interconnected and cooperate towards the coordinated execution of tasks. In this research project we examined the potential for multiple robot to accomplish certain tasks more quickly and robustly than single robots. As a result, the team of mobile robots will cooperate in challenging scenarios in the execution of missions where all data is processed online. In doing so, the team will be robust with respect to failures and environmental changes. The key features are being tested in real world scenarios.

RESEARCH

My research interests in a broad sense are directed toward exploring fundamental motion control concepts for nonholonomic/underactuated vehicle systems, such as watercraft, landcraft, aircraft, and spacecraft. Current results entail controlling both fully actuated and underactuated vessels. Main goals include advanced features such as collision avoidance, formation control, and synchronization capabilities. I have authored/co-authored several technical papers in both international conferences and peer-reviewed high standard journals.

PUBLICATIONS

Refereed Journals

- J. Ghommam** & M. Saad, "Three-Dimensional Distributed Tracking Control for Multiple Quadrotor Helicopters", Journal of the Franklin Institute (Submitted).
- J. Ghommam**, G. Charland, & M. Saad, "Three-Dimensional Constrained Tracking Control via Exact Differentiation Estimator of a Quadrotor Helicopter", Asian Journal of Control (To appear).
- J. Ghommam** & M. Saad, "Backstepping-based cooperative and adaptive tracking control design for a group of underactuated AUVs in horizontal plan", International Journal of Control, Vol. 87, Issue 5, (2014) pp.1–18.
- J. Ghommam**, M. Mahmoud, & M. Saad, "Robust Cooperative Control for a Group of Mobile Robots with Quantized Information Exchange", Journal of the Franklin Institute, Vol. 350, (2013) pp. 2291–2321.
- J. Ghommam**, H. Mehrjerdi & M. Saad, "Robust Formation Control without Velocity Measurement of the Leader Robot," Control Engineering Practice, Volo. 21, (2013), pp. 1143–1156.

- J. Ghommam**, F. Mnif, & O. Calvo, "Formation Control of Multiple Marine Vehicles with Velocity Reference Estimation Based Passivity-Control Design", *Int. J. Modeling, Identification and Control*, Vol.15, Issue. 2, pp. 97–107, 2012.
- H. Mehrjerdi, **J.Ghommam**, M.Saad, "Nonlinear Coordination Control for a Group of Mobile Robots Using a Virtual Structure," *Mechatronics–Elsevier*, Vol 21, Issue 7, pp. 1147–1155, Oct 2011.
- Yassine Bouteraa, **Jawhar Ghommam**, Nabil Derbel, & Gérard Poisson, "Nonlinear Control and Synchronization with Time Delays of Multi-agent Robotic Systems," *Journal of Control Science and Engineering*, vol. 2011, pp. 1–9, 2011.
- Yassine Bouteraa, Asma Ben Mansour, **Jawhar Ghommam** & Gérard Poisson, "Cooperative control and synchronization with time delays of multi-robot systems," *Journal of Engineering and Computer Innovations* Vol. 2(2), pp. 28-39, Feb 2011.
- Yassine Bouteraa, **Jawhar Ghommam**, Gérard Poisson & Nabil Derbel, "Distributed Synchronization Control to Trajectory Tracking of Multiple Robot Manipulators," *Journal of Robotics*, vol. 2011, pp. 1–10, 2011.
- J. Ghommam**, H. Mehrjerdi, M. Saad, & F. Mnif, "Adaptive Coordinated Path Following Control of Nonholonomic Mobile Robots with Quantized Communication", *IET Control Theory & Appl.*, Vol 5, Issue 17, pp. 1990–2004, Nov 2011.
- J. Ghommam**, H. Mehrjerdi, F. Mnif & M. Saad, "Cascade Design for Formation Control of Nonholonomic Systems in Chained Form", *Journal of the Franklin Institute*, vol. 348, no. 6, pp. 973-998, 2011.
- J.Ghommam**, H. Mehrjerdi, M.Saad & F. Mnif, "Formation path following control of unicycle-type mobile robots", *Robotics and Autonomous Systems*, Volume 58, Issue 5, , pp. 727–736, May. 2010.
- H. Mehrjerdi, M.Saad, & **J.Ghommam**, "Optimized Neuro-fuzzy coordination for multiple four wheeled mobile robots," *Information Technology Journal*, vol.9, no. 8, pp.1557–1570, 2010.
- J. Ghommam**, F. Mnif, & N. Derbel, "Global stabilization and tracking control of underactuated surface vessels", *IET Control Theory & Appl.*, vol, 4, Issue 1, pp.1–18, 2010.
- J. Ghommam**, H. Mehrjerdi, & M. Saad, "Coordinated path following control for a group of mobile robots with velocity recovery", *Journal of Systems and Control Engineering, Proceedings of the Institution of Mechanical Engineers, Part I*, vol. 224 no. 8 , pp. 995-1006, December 2010.

- H. Mehrjerdi, M. Saad, & **J. Ghommam**, "Hierarchical Fuzzy Cooperative Control and Path Following for a Team of Mobile Robots", IEEE/ASME Trans. On Mechatronics, vol. 15, no. 6, pp.1-11, 2010.
- J. Ghommam**, F. Mnif, "Coordinated Path-Following Control for a Group of Underactuated Surface Vessels", IEEE Transactions on Industrial Electronics, vol. 56, Issue 10, pp. 3951–3963, Oct. 2009.
- J. Ghommam**, F. Mnif, A. Benali, & N. Derbel, "Nonsingular Serret–Frenet based path following control for an underactuated surface vessel", Journal of dynamic systems, measurement and control ASME, vol. 131, pp. 1–7, March 2009.
- J. Ghommam**, F. Mnif, A. Benali & N. Derbel, "On the dynamic properties and control of underactuated surface vessels", Int. J. Modelling, Identification and Control, Vol. 2, No. 1, 2007.
- J. Ghommam**, F. Mnif, A. Benali & N. Derbel, "Asymptotic Backstepping Stabilization of an Underactuated Surface Vessel", In IEEE Transactions on Control Systems Technology, Volume: 14, Issue: 6, 2006.
- F. Mnif, **J. Ghommam**, "Genetic Algorithms Adaptive Control for an Underactuated System", International Journal of Computational Cognition, Vol.3, No.1, March 2005 .

Refereed Conferences

- A. Chabir, M. Boukhniifer, Y. Bouterraa & **J. Ghommam**, "Fixed Order Robust H_∞ Controller for 3-DOF Helicopter", In Proc of the 11th Int. conf. on Modeling and Simulation of electric Machines, Converters and Systems, Valencia, Spain (2014).
- M. T. Meziou, A. Chemori, **J. Ghommam**, & N. Derbel, "RISE Feedback Control for a R/W Head Track Following in Hard Disc Drives", In Proc of the 12th Int. Multi-conf on Systems, Signals and Devices (SSD), Castelldefels-Barcelona : Spain (2014).
- M. T. Meziou, A. Chemori, **J. Ghommam**, & N. Derbel, "Model Predictive Tracking Control for a Head-Positioning in a Hard-Disk-Drive", In Proc of the 21st Mediterranean Conference on Control and Automation, 25-28 June 2013, Greece.
- M. T. Meziou, **J. Ghommam**, & N. Derbel, "Track following problem of a VCM actuator servo system for hard disc drives using predictive control", In Proc. of the 9th Int. Multi-conf on Systems, Signals and Devices (SSD), pp. 1–7, 22–23 March 2012. Germany.
- H. Mehrjerdi & M. Saad, **J. Ghommam**, "Multi mobile robots formation in presence of obstacles", IEEE International Conference on Mechatronics (ICM), pp. 510–515, 13-15 April 2011, USA.

- M. Taktak, **J. Ghommam**, & N. Derbel, "Adaptive Backstepping Neural Network approach to ship course control", In Proc. of the 8th Int. Multi-conf on Systems, Signals and Devices (SSD), pp. 1–6, 22–25 March 2011. Tunisia.
- Y. Bouterra, G. Poisson, **J. Ghommam** & N. Derbel, "On the trajectory tracking and coordination of multi-robot systems with communication delay", In Proc. of the 8th Int. Multi-conf on Systems, Signals and Devices (SSD), pp. 1–6, 22–25 March 2011. Tunisia.
- J. Ghommam**, H. Mehrjerdi & M.Saad, "Leader-Follower Based Formation Control of Nonholonomic Robots Using the Virtual Vehicle Approach", In proc of IEEE International Conference on Mechatronics, 13-15 April, 2011, Istanbul, Turkey.
- J. Ghommam**, Y. Bouterra, F. Mnif & G. Poisson, "Distributed Backstepping Control for Synchronization of Networked class of Underactuated Systems: A Passivity Approach Presentation format", In Proc of IEEE, the 19th Mediterranean Conference on Control Automation, June 20-23, 2011, Corfu, Greece.
- J. Ghommam**, H. Mehrjerdi & M.Saad, "Leader-Follower Formation Control of Nonholonomic Robots with Fuzzy Logic Based Approach for Obstacle Avoidance", IEEE/RSJ International Conference on Intelligent Robots and Systems, pp. 2340-2345, 25-30 Sept 2011, USA.
- Y. Bouterra, **J. Ghommam** & G. Poisson, "Distributed backstepping control for synchronization of networked class of underactuated systems: A passivity approach", in Proc. of the 19th Med. conference on Control & Automation (MED), pp. 7–12, 20-23 june 2011, Greece
- Y. Bouterra, **J. Ghommam** & G. Poisson, "Adaptive Synchronization Control of Multi-Robot Teams: Cooperative and Coordinated Schemes", In. Proc. of the 18th Mediterranean Conference on Control and Automation, 23-25, 2010, Marrakech, Morocco.
- Y. Bouterra, **J. Ghommam**, "Mutual and external synchronization control of multi-robot systems", In. Proc. of the 7th Internatioanl multi-conference on system, signal & devices, SSD'10, 28–30, 2010, Jordan.
- M. Taktak, **J. Ghommam**, & N. Derbel, "Robust adaptive path following for a nonlinear third order Nomoto's ship model", In. Proc. of the 7th Internatioanl multi-conference on system, signal & devices, SSD'10, 28–30, 2010, Jordan.
- J. Ghommam**, M.Saad, & F. Mnif, "Robust Adaptive Formation Control of Fully Actuated Ocean Vessels Using Local Potential Functions", In. Proc. of the IEEE International Conference on Robotics and Automation, May 3-8, 2010, Anchorage, Alaska, USA.

- H. Mehrjerdi, M.Saad, **J.Ghommam**, A.Zerigui, "Cooperation Control for a Team of Mobile Robots Based on Fuzzy Logic," IEEE/ASME International Conference on Advanced Intelligent Mechatronics, July 6–9, 2010 Montreal, Canada.
- H. Mehrjerdi, M.Saad, **J.Ghommam**, "Formation and path following for multiple mobile robots," IEEE International Symposium on Industrial Electronics 4–7 July, 2010, Bari, Italy.
- H. Mehrjerdi, M.Saad, **J.Ghommam** "Fuzzy Crash Avoidance and Coordination between Mobile Robots," 18th Mediterranean Conference on Control and Automation , pp. 592–597, 2010, Marrakech, Morocco.
- J. Ghommam**, F. Mnif & O. Calvo, "Formation Control of Multiple Marine Vehicles Based Passivity-Control Design", In. Proc. of the 6th IEEE conference on SSD'09, Mars, 2009, Djerba, Tunisia .
- J. Ghommam** & M. Saad, "Coordinated 3D path following control for a team of UAVs with reference velocity recovery", In. Proc of the European Control Conference, August 23–26, 2009, Budapest, Hungary.
- J. Ghommam**, O. Calvo, & A. Rozenfeld , "Synchronization path following control of multiple underactuated marine crafts", in Proc. IEEE/MTS Ocean 2008, Quebec, Canada
- J.Ghommam**, O.Calvo, & A. Rozenfeld, "Coordinated path following for multiple underactuated AUVs", in Proc. IEEE/MTS Ocean 2008, Kope, Japan.
- J.Ghommam**, M.Saad, F.Mnif "Formation path following control of unicycle-type mobile robots", in Proc. Of the IEEE International Conference on Robotics and Automation, ICRA'08, May 2008, USA.
- J. Ghommam**, F. Mnif, & N. Derbel, "Backstepping Technique for tracking control of an underactuated surface vessel with unmeasured thruster dynamic". in Proc. IFAC World Congress 2008, Seoul, South Korea.
- J. Ghommam** & G. Poisson, "Motion coordination control of multiple marine crafts", in Proc. of the IEEE International Workshop on Advanced Motion Control, Trento (Italy), March, 2008.
- J.Ghommam**, F.Mnif, A.Benal & G.Poisson, "Observer design for Euler Lagrange system: Application to path following control of an underactuated surface vessel", in Proceeding, IEEE/RSJ International conference on intelligent robots and systems, IROS'07, October 2007, USA.
- J.Ghommam**, F.Mnif, G.Poisson & N.Derbel,"Nonlinear Formation Control of a Group of Underactuated Ships", in Proceedings of IEEE/OES Oceans 07 Aberdeen Conference. 2007.

- J.Ghommam**, F.Mnif, A.Benali & G.Poisson, "Guidance based path following control for an underactuated ship", in Proceedings of IEEE International Multi-Conference on Systems, Signals & Devices. 2007, Hammamet, Tunisia.
- J.Ghommam**, F.Mnif & N.Derbel, "Robust path following control of underactuated ship", in Proceedings of IEEE International Multi-Conference on Systems, Signals & Devices. 2007, Hammamet, Tunisia.
- J.Ghommam**, F.Mnif & N.Derbel, "Formation Control based Path Following: Application to a Double Integrator", in Proceedings of IEEE International Multi-Conference on Systems, Signals & Devices. 2007, Hammamet, Tunisia.
- J.Ghommam**, F.Mnif, N.Derbel, G.Poisson & A.BenAli, "Backstepping Technique for the tracking control of an underactuated surface vessel", in Proceedings of the 7th International Conference on Marine Control of Marine Craft, IFAC 2006, Lisbon, Portugal.
- J.Ghommam**, A.Benali & G.Poisson, "Stabilisation par la methode du backstepping d'un navire sous-actionn", in Proceedings of the Conference Internationale Francophone d'Automatique CIFA 2006, Bordeaux, France.
- J. Ghommam**, F. Mnif, & N.Derbel, "Path following for underactuated marine craft using Line Of Sight algorithm", in the proceeding of the International Conference on Machine Intelligence, Touzer-Tunisia, November 5-7, 2005.
- J. Ghommam**, F. Mnif, A.Benali & N.Derbel, "Asymptotic Backstepping Stabilization of an Underactuated Surface Vessel", in the proceedings of IEEE International Multi-Conference on Systems, Signals & Devices. 2005, Sousse, Tunisia.
- F.Mnif, **J.Ghommam** "Stabilization for a class of underactuated mechanical systems", IEEE SMC'2002.

BOOKS

J. Ghommam, "Commande non-linéaire et navigation des véhicules marins sous-actionnés", Edilivre, ISBN : 9782356076175.

TECHNICAL SKILLS

Extensive hardware and software experience in information technology

MATLAB experience: linear algebra, differential equations, Fourier transforms, Laplace transform, nonlinear numerical methods, polynomials.

MATLAB toolboxes: communications, control system, robust control, genetic algorithm, signal processing, system identification, guidance navigation and control GNC, xPC target.

Instrumentation and Control: Simulink, LabVIEW and other National Instruments control and data acquisition hardware and software

Programming: C, Objective-C, Pascal, Basic, PHP, UNIX shell scripting, Java and others

Web languages: HTML/XHTML+CSS, PHP

Applications: T_EX, L^AT_EX, B_IB_TE_X, Microsoft Office, and other common productivity packages for Windows and Linux platforms

Operating Systems: Microsoft Windows XP/2000, Linux and other UNIX variants

MATHEMATICAL EXPERTISE Mathematical modeling and simulation of physical systems

EXPERTISE

Linear and Nonlinear Systems Theory

Control theory, including linear and non-linear systems theory

Basic Kalman filtering and digital signal processing

Optimization theory

Laplace analysis

LANGUAGE

- Arabic Mother tongue language
- Fluent in English
- Fluent in French
- Capable of reading and understanding oral Italian and Spanish

REFERENCES

These persons are familiar with my professional qualifications and my character:

Professor Faïçal Mnif

Ph.D Thesis co-advisor

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