

Mohamed Habib KAMMOUN

PhD Student, Assistant



Curriculum vitæ

Personal Data

Date of birth January 29, 1980
Place of birth Sfax (Tunisia)
Civil status Married
Nationality Tunisian
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Current Situation

Since Sept. 08 Assistant, Department of Computer Science
The Gafsa Faculty of Science, University of Gafsa (Tunisia)
Since Jan. 06 PhD Student on Computing System engineering
National Engineering School (ENIS), University of Sfax (Tunisia)
Since Sept. 04 Member of Research Groups on Intelligent Machines (REGIM Laboratory)
National Engineering School, University of Sfax (Tunisia)

Diplomas

2003–2005 Master Degree on Computer Science, Dedicated Computer System New Technologies (NTSID)
National Engineering School, University of Sfax (Tunisia)
2001–2003 Four-year University Degree on Computer Science
Faculty of Science, University of Sfax (Tunisia)
1999–2001 D.U.E.S. Degree on Mathematics, Physics, Chemistry, Computer Science
Faculty of Science, University of Sfax (Tunisia)
June 1998 Baccalaureate on Technology
April 9, 1938 secondary School, Sfax (Tunisia)

Research Activities

Research Interests

My research interests focus on the design of intelligent approaches to solve real-world problems, especially transportation problems. In this context, I am interested in some fields :

- MultiAgent Modeling and Simulation
- Fuzzy Logic
- Ant Colony Optimization
- Reinforcement Learning
- Vehicle Route Guidance System
- Road Traffic Simulation

Thesis

- Subject** A MultiAgent Adaptive Vehicle Route Guidance System based on Hybrid Ant-Hierarchical Fuzzy Model
- Abstract** In view of the sharp increase of vehicle number, accidents and traffic jam situations in all road networks have become wide spread all over the world. A solution for these problems is to develop and invest in Intelligent Transportation System (ITS) which is capable of managing in a better way the existing capacity and developing more efficient vehicle routing over time and space, in order to improve safety, traffic efficiency, etc. The main objective of my works is the development of a management/control strategy of road traffic in real-time in order to improve traffic efficiency and reduce road congestion states. Furthermore, the system has to guide drivers' vehicles to reach their destinations taking into account the current state of the road network. The proposed method is implemented as a deliberative module of a vehicle ant agent in a collaborative multiagent system representing the entire road network. It is based on an hybrid method based on ant colony behavior and hierarchical fuzzy logic. Series of simulations, under a multiagent platform, allow us to discuss the improvement of the global road traffic quality in terms of time, fluidity, and adaptability.
- Speciality** Computing System engineering
National Engineering School, University of Sfax (Tunisia)
- Advisor** **Mr. Adel M. Alimi**, *Professor, REGIM Laboratory (Research Groups on Intelligent Machines), University of Sfax*
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- Co-Advisor** **Mr. Jorge Casillas**, *Associate Professor, SCI2S Laboratory (Soft Computing and Intelligent Information Systems), University of Granada*
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- Co-Advisor** **Mme Ilhem Kallel**, *Assistant Professor, REGIM Laboratory (Research Groups on Intelligent Machines), University of Sfax, Tunisia*
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Master

- Title** MultiAgent Modeling and Simulation of Autonomous Agents' cooperation for Road Supervision Framework (In French)

- Abstract This work is placed in the context of conception, modelling and simulation of complex systems, more especially the administration of road networks. It is integrated in the setting of two recent domains : the multi-agent approach and the intelligent transport systems ITS. We present an architecture of road supervision system based on multi-agent approach, called RoSMAS. This architecture is based on the Aalaadin organizational model. A system design has been achieved using the AUML. A road network simulator, RoSMAS2, has been achieved while using MadKit multi-agent platform. Some simulation results are also presented.
- Speciality Dedicated Computer System New Technologies (NTSID)
National Engineering School, University of Sfax (Tunisia)
- Advisor **Mr. Mohamed Adel Alimi**, *Professor, University of Sfax, REGIM Laboratory*

Publications

International Book Chapters

- 1 **Habib M. Kammoun**, Ilhem Kallel, Adel M. Alimi (2008). A Hierarchical Fuzzy Controller for Route Choice Problem. *In New Developments in Robotics, Automation and Control*, I-Tech Education and Publishing, edited by A. Lazinic, October 2008, pp. 285-302.

International Conferences

- 6 **Habib M. Kammoun**, Ilhem Kallel, Jorge Casillas, Adel M. Alimi (2011). Improvement of the Road Traffic Management by an Ant-Hierarchical Fuzzy System. *IEEE Symposium on Computational Intelligence in Vehicles and Transportation Systems CIVTS, SSCI 2011*, April 2011, Paris-France, pp. 38-45.
- 5 **Habib M. Kammoun**, Ilhem Kallel, Jorge Casillas, Adel M. Alimi. (2010). An Adaptive Vehicle Guidance System instigated from Ant Colony Behavior. *IEEE International Conference on Systems, Man, and Cybernetics SMC*, October 2010, Istanbul-Turkey, pp. 2948-2955.
- 4 Sonia Kefi, **Habib M. Kammoun**, Ilhem Kallel, Adel M. Alimi (2010). Hybrid Fuzzy-MultiAgent Planning for Robust Mobile Robot Motion. *IEEE World Congress on Computational Intelligence WCCI*, July 2010, Barcelona-Spain, pp. 1886-1893.
- 3 **Habib M. Kammoun**, Ilhem Kallel, Jorge Casillas, Adel M. Alimi (2008). A Road Traffic MultiAgent Simulation using TurtleKit under MadKit. *9th International Conference on Artificial Intelligence and Soft Computing ICAISC*, In Challenging Problems of Science series, Computational Intelligence : Method and Applications, June 2008, Zakopane-Poland, pp. 503-514.
- 2 **Habib M. Kammoun**, Ilhem Kallel, Adel M. Alimi (2007). A Joint Hierarchical Fuzzy-MultiAgent Model Dealing with Route Choice Problem. *4th International Conference on Informatics in Control, Automation and Robotics ICINCO*, May 2007, Angers-France, pp. 394-397.
- 1 **Habib M. Kammoun**, Ilhem Kallel, Adel M. Alimi (2005). RoSMAS2 : Road Supervision based Multi-Agent System Simulation. *2nd International Conference on Machine Intelligence ACIDCA-ICMI*, November 2005, Tozeur-Tunisia, pp. 203-210.

Reports

- 2 **Habib M. Kammoun (2005)** *MultiAgent Approach and Simulation for Road Supervision (In French)*. Master memory on Dedicated Computer System New Technologies, National School of Engineers, University of Sfax (Tunisia).
- 1 **Habib M. Kammoun (2003)** *Development of a library components (In French)*. Four-year University Degree Memory on Computer Science, The Sfax Faculty of Science, University of Sfax (Tunisia).

Research Projects

- Jan.07-Dec.12 Member of REGIM's project
Title Development of Smart Cars
- Jan.05 - Dec.05 Member of Tunisian-Spanish cooperation project
Title Remote Control of Adaptive and Self-governing Mobile Robot Systems to Perform Joint Task by Beta-type Genetic Fuzzy Systems
Partner Soft Computing and Intelligent Information Systems (SCI2S) Laboratory, University of Granada, Spain

Research Stays

- July 06-16, 2010 Research stay supervised by Jorge Casillas, Thesis Advancement, in SCI2S Laboratory (Soft Computing and Intelligent Information Systems), Department of Computer Science and Artificial Intelligence (DECSAI), University of Granada, Spain.
- May 06-June 22, 2008 Research stay supervised by Jorge Casillas, Thesis Advancement, in SCI2S Laboratory (Soft Computing and Intelligent Information Systems), Department of Computer Science and Artificial Intelligence (DECSAI), University of Granada, Spain.
- May 14-June 9, 2007 Research stay supervised by Jorge Casillas, Thesis Advancement, in SCI2S Laboratory (Soft Computing and Intelligent Information Systems), Department of Computer Science and Artificial Intelligence (DECSAI), University of Granada, Spain.
- Nov.30-Dec.24, 2007 Research stay as part of the Tunisian-Spanish cooperation project (code 39/04/P), in SCI2S Laboratory (Soft Computing and Intelligent Information Systems), Department of Computer Science and Artificial Intelligence (DECSAI), University of Granada, Spain.

Scientific Event Attendances

- Apr. 11-15, 11 IEEE Symposium Series on Computational Intelligence SSCI, Paris-France
- Oct. 10-13, 10 IEEE International Conference on Systems, Man, and Cybernetics SMC, Istanbul-Turkey
- July 18-23, 10 IEEE World Congress on Computational Intelligence WCCI, Barcelona-Spain
- Aug. 23-29, 09 Advanced Course in Artificial Intelligence Summer school ACAI, Belfast, Northern Ireland-United Kingdom
- Dec. 26-28, 08 1st Doctoral School on Science and Technology JEDST (in French), Monastir-Tunisia
- June 22-26, 08 9th International Conference on Artificial Intelligence and Soft Computing ICAISC, Zakopane-Poland
- Dec.13-14, 07 5th European Workshop on Multi-Agent Systems EUMAS, Hammamet-Tunisia

- May 9-12, 07 4th International Conference on Informatics in Control, Automation and Robotics ICINCO, Angers-France
- Nov.24-25, 06 50th Anniversary of Artificial Intelligence : Past, Present and Future (in French), ATIA - INSAT, Tunis-Tunisia
- March23-26, 06 6th Conference on Electric and Computer Science GEI (in French), Hammamet-Tunisia

Employment

- Since Sept.08 Assistant, Department of Computer Science
Faculty of Science, University of Gafsa (Tunisia)
- Sept.05 - July08 Contractual assistant, Department of Computer Science and Communications
Faculty of Science, University of Sfax (Tunisia)
- Sept.03 - July05 Researcher student, Department of Computer Science and Communications
Faculty of Science, University of Sfax (Tunisia)

Pedagogical Activities

Teaching Experience (in French)

In the Gafsa Faculty of Science :

	Subject	Charge	Section	Schedule
2011->2012	Basis Aartificial Intelligence	Lect.,Tut.	LFSI3	1h30mn/week
2008->2012	Compiler	Lect.,Tut.	LFSI2	1h30/week
2008->2010	Formal language theory	Lecture	LFSI2	1h30mn/week
2008->2010	Artificial intelligence	Lect.,Tut.	I4	1h30mn/week
2010->2011	C2i	Int. C.	LFSI1	1h30mn/week

In the National Engineering School of Sfax :

	Subject	Charge	Section	Schedule
2009->2010	Intell. Syst. Design (MAS)	Int. C.	GI3-ISI	2h/week

In the Sfax Faculty of Science :

	Subject	Charge	Section	Schedule
2007->2008	Graph Theory	Tutorial	I3	1h30mn/week
2007->2008	Advanced Topics in Algorithms	Tutorial	I3	1h30mn/week
2005->2008	Data Structures	Tutorial	MI2	1h30mn/week
2005->2008	C++ O.O Programming Language	Tutorial	MI2	1h30mn/week
2003->2007	C Programming Language	Lect.,Pract.	MI1, TII2	1h30mn/week

Pedagogical Training (in French)

- Nov.14, 07 Pedagogy Seminar, ESSTSS, Sfax, Tunisia
- April, 05 Pedagogical Training Course, ENIS, Sfax, Tunisia
- Apr. 13-14, 04 Spring Course on Pedagogy, ENIS, Sfax, Tunisia

Certifications

January 2008 Computer Science and Internet Certificate (C2i), Virtual University of Tunisia

Continuous Training

- March 21-25, 08 Spring School on Practice of free software (in French), EPL2, Gammarth-Tunisia
- February 08 English for academic purposes - Speaking in academic settings, ENIS, Sfax-Tunisia
- Dec. 26-29, 07 Winter School on document preparation system : LaTeX (in French), ECO-LATEX, Manastir-Tunisia
- Nov. 07 English for academic purposes - listening in academic settings, ENIS, Sfax-Tunisia
- July 2-6, 07 LPI 101 Linux Certification Training (in French), Linux Professional Institute, AUF - ADCNS, Sfax-Tunisia
- March 19-23, 07 Transfer Training Workshop 3.2 : Design, development and use of online course (in French), AUF - University of Kairouan, ISIGK, Kairouan-Tunisia

Scholarships and Grants

- April 2011 Travel Grant from IEEE Computational Intelligence Society to participate to the IEEE Symposium Series on Computational Intelligence SSCI, Paris-France
- August 2009 Travel grant from European Coordinating Committee for Artificial Intelligence (ECCAI) to participate in the ACAI 2009 summer school, Belfast, UK
- May 2008 Scholarship from Doctoral School in ENIS - Tunisia, for a research stay in University of Granada, Spain
- May 2007 Scholarship from Doctoral School in ENIS - Tunisia, for a research stay in University of Granada, Spain
- December 2005 Accommodation and Travel Grant from Tunisian-Spanish cooperation project (code 39/04/P) for a research stay in Granada - Spain

Memberships

- Since Aug. 2011 Association of Sustainable Innovation @ Tunisia, General Secretary
- 2009 Member of French Association for Artificial Intelligence (AFIA)
- 2006-2007 Member of Tunisian Association for Artificial Intelligence (ATIA)
- Since Sep. 06 Member of Scientific Association for Research and Technologic Innovation Support (ASARIT)
- Since April 06 Graduate Student Member of Institute of Electric and Electronic Engineering (IEEE), IEEE Computational Intelligence Society (CIS), IEEE Computer Society (CS), and IEEE Systems, Man, and Cybernetics (SMCS)
- Since Sep. 04 Member of Research Groups on Intelligent Machines (REGIM Laboratory)

Associative Positions

- Since Aug. 2011 Association of Sustainable Innovation @ Tunisia, General Secretary and co-founder
- Since Jan. 2011 IEEE GOLD Tunisia Affinity Group, Chair
- Since Jan. 2011 IEEE SMC Society - Tunisia chapter, Treasurer
- Since Jan. 2011 Member in IEEE CIS Social Media Committee
- Since Nov. 2010 IEEE Sfax Subsection, Treasurer and co-founder
- Apr.-Dec. 2010 IEEE GOLD Tunisia Affinity Group, vice chair and co-founder

- Since Jan. 2010 Member in IEEE SMCS Student Activities Committee
- Since Jan. 2010 IEEE Computer Society - Tunisia chapter, Treasurer
- Since June 2009 IEEE SMCS Student Branch Chapter in ENIS, Chair and founder
- Since Apr. 2009 IEEE Student Branch in ENIS, Chair and Founder

IEEE Event Attendances

- Oct. 9-13, 11 IEEE IAS Annual Meeting, IAS chapter meeting, Orlando-USA
- Aug. 19-22, 11 IEEE Sections Congress, Region 8 meeting, GOLD Summit, Computer chapter meeting, San Francisco-USA
- Aug. 4-8, 10 IEEE R8 Student Branch and GOLD Congress 2010, Leuven-Belgium
- May 19, 10 IEEE R-8 First COMP/RAS/EMB/IES/IAS/PELS Chapter Chairs Meeting, Lisbon-Portugal
- May 11-14, 09 1st IEEE Middle East Student Branch Congress, Amman-Jordan

Organizing Activities

- 2009 - 2012 Member in the organizing committee of IEEE Distinguished Lectures invited by IEEE Tunisia chapters : William A. Gruver (Canada) in March 2009, Jim Bezdek (USA) in November 2009, Hiroshi Nakajima (Japan) in March 2010, Ngoc-Thanh Nguyen (Poland) in October 2010, Ajith Abraham (Czech Republic) in September 2011, Chris G. Guy (UK) in January 2012
- Dec. 18-22, 11 Leadership Winter School LWS, Hammamet-Tunisia (organizing committee co-Chair)
- Dec. 18-20, 11 3th Int. Conf. on Next Generation Networks and Services NGNS, Hammamet-Tunisia (publication chair, with IEEE Xplore)
- Dec. 18-20, 11 2nd Robotics Competition, Hammamet-Tunisia (finance chair)
- Sep. 17, 11 Software Freedom Day (SFD) Tunisia 2011, Sfax-Tunisia (chair)
- Jul. 19-23, 11 Summer School on Innovation SSI, Sousse-Tunisia (program co-chair)
- May 31-Jun 3, 11 4th Int. Conf. on Logistics LOGISTIQUA, Hammamet-Tunisia (publication chair, with IEEE Xplore)
- Dec. 27-29, 10 2nd Doctoral School on Science and Technology JEDST (in French), Monastir-Tunisia (organizing committee member)
- Nov. 27, 10 IEEE ICT Companies Day, ENIS, Sfax-Tunisia (chair)
- Sep. 18, 10 Software Freedom Day, ENIS, Sfax-Tunisia (chair)
- Apr. 23-25, 10 1st Robotics Competition, ENIS, Sfax-Tunisia (finance chair)
- March 16-19, 10 Workshop on Intelligent Machines : Theory and Applications WIMTA, Sousse-Tunisia (co-chair)
- Nov.5-8, 09 Workshop on Computational Intelligence in Systems Design : Theory and Applications CISD, Djerba Island-Tunisia (organizing committee chair)
- Dec.17-20, 06 Winter School on Valorization of Innovation by Patents (in French) EHVB, Sousse-Tunisia (local arrangement co-chair)
- Nov.5-7, 05 2nd International Conference on Machine Intelligence ACIDCA-ICMI, Tozeur-Tunisia (organizing committee member)
- Dec.26-28, 04 Winter School on Matlab and Applications (in French) EHMA, Tozeur-Tunisia (organizing committee member)