CURRICULUM VITAE

Rawan Ghnemat

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1. **Personal Data**

   Date of Birth: 5th of June 1980
   Nationality: Jordanian

2. **Education**

   - Ph.D. (Computer Science) 2009, Le Havre University, Le Havre, France .
   - M.Sc. (Computer Science) 2006, University, Al-Balqa' Applied University, Salt, Jordan.
   - B.Sc. (Geomatics Engineering) 2003, Name of University, Al-Balqa' Applied University, Salt, Jordan.

3. **Ph.D. Dissertation**

Title of Dissertation: **"Adaptive Modeling for Spatial Emergence within Complex Systems"**, Le Havre University, Le Havre, France.

4. **Employment**

Academic Positions

Assistant Professor, Department of Computer Science, King Hussein School for Information technology, **Princess Sumaya University for Technology**, Amman, Jordan. September 2011 – present.

Assistant Professor, Department of Computer Science, School of Informatics and Computing, **German-Jordanian University**, Amman, Jordan September 2009 - September 2011.

5. Research Interests

Artificial Intelligence, Swarm Intelligence, Urban Dynamics and sustainable development, Evolutionary Algorithms (EAs), Multi-Agent Systems (MAS), Complex Systems Modeling, Geographical Information Systems (GIS), intelligent Search Engines.

6. Membership in Scientific Societies and Associations

- **LITIS** (Computer Science, Information Processing, and Systems Laboratory, Normandy Region, France)

- **CSS** (Complex Systems Society): European Network.

- **S4** (Spatial Simulation for Social Systems): This scientific network develops high-level researches based on intelligent processes that model spatial emergent organizations. More than 20 research laboratories are involved in several European countries.

- **RNSC** (Réseau National des Systèmes Complexes): French National Network on Complex Systems, this huge national network aims to organize all the researches in complex systems in France. Several hundred of researchers belong to this network.

- **METISSE**: French research group on Modeling and engineering social and environmental systems

- **ISCN** (Institute of Complex Systems in Normandy)

- This new institute aimed to structure multidisciplinary researches in complex systems. It is a new node of the RNSC.

7. Fellowships and Scholarships

- A scholarship from Al-Balqa' Applied University to get the master degree in Computer Science (2004-2006).

- A scholarship from the French Government to get the Ph. D in Computer Science from Le Havre University, France (2006-2009).

9. Teaching Experience

- o Structured programming using C.
- o Introduction to computer science.
- o Artificial intelligence
- o Graduation projects

- o C programming language.
- o Compiler construction.
- o Algorithms and data structure.
- o Senior projects
- o Object oriented programming (Java).
- o Computer graphics
- o Artificial intelligence
- o Geographical information system

The student's evaluations for my courses have been one of the best evaluation in the collage.

10. **Supervision of Graduate Research**

- Ruba Zaghari, Behavioral Segmentation for Web Users Using Self-Organizing Kohonen Maps, 2012-2013.

- Mohammad Ghazawi, Dynamic Clustering Queries for Search Engines using Particle Swarm Optimization Algorithm, 2016 in progress.

11. **Grants**

- Distribute artificial intelligence for business intelligence; application to mobile customer segmentation, 2011, German Jordanian university, 18800 JD.

12. **Membership of Committees**

- **National and International**

  - Member in higher education accreditation council for computer science and information technology programs since the year 2016/2017.

  - Funded research project evaluation for Jordanian ministry of higher education and scientific research.

  - Attending Dubai Smart City / Expo 2014 seminar and give a talk about intelligent web based applications.

  - Participation in a focus group about: "The Challenges Women Face in Innovation in Jordan" Project and funded by Civic Initiatives Support Program (USAID-CIS).

- Member in French university graduate alumni in Jordan.

- PSUT representative years 2015 for Tempus project workshops in Jordan.

- Member in UNESCO UniTwin initiative and Complex System Digital Campus.

- Member of scientific committee for international conferences :

- Summer Computer Simulation Conference (SCSC), July 11- 14, 2010, Ottawa, Canada.

- EPNACS 2010 within ECCS'10, Lisbon, Portugal, September 15-16, 2010.

- EPNACS 2011 within ECCS'11, Vienna, Austria, September 14-15, 2011.

- Member in the Editorial Board of Journal of Intelligent Computing, Dline.

- Member in the Jordan Engineers Association (JEA).

- **University**

  - Computer science department representative in the collage council for the year 2014/2015.

  - Member in Faculty graduation project evaluation committee.

  - Member in Faculty library committee.

  - Geographic information system Master degree preparation committee

  - Member in Faculty field training committee.

  - Organize a presentation on stress management skills.

  - Member in Faculty social committee

  - Member in Faculty scientific committee

  - Acting head of computer science department in summer semester 2016.

13. **Professional and Scientific Meetings**

Scientific Meetings Organized

- Participating in Interdisciplinary Workshop in Dresden University/Germany with master students to introduced to teaching and research activities in computer science master program in the period December 10th to December 19th, 2015.
- PSUT representative in ERASMUS-plus national workshop 2015.

- Territorial Intelligence Modeling and Technological Issues (TIMoTI)" meeting, Coordinator: Rawan Ghnemat, Partners from Jordan: Royal Scientific Society (RSS) (leading institution), PSUT; Partners from France: University of Le Havre, University of Rouen, and INSA Rouen. RSS, January 2013.
- Orange Telecom meeting on « Artificial intelligence algorithms development on mobile phone data for commercial segmentation ».Orange Jordan, April 2011.

Participation in Scientific meetings

- Invited Speaker in Dubai Smart City / Expo 2020 seminar about intelligent web applications. Dubai, April 5 – 7/ 2014.
- The Second International Conference on e-Technologies and Networks for Development. Kuala Lumpur, Malaysia, March 4-6, 2013.

- MESM'2011, Middle Eastern Simulation and Modelling Conference, Amman, Jordan November 14-16, 2011.

- IEEE International Conference and Workshops on Engineering of Autonomic and Autonomous Systems (EASe 2010), University of Oxford, England, March 22-26, 2010.

14. **Participation in or organization of curricular and/or extra-Curricular activities**

- Funded research project evaluation for Jordanian ministry of higher education and scientific research.
- Participation in a focus group about: "The Challenges Women Face in Innovation in Jordan" Project and funded by Civic Initiatives Support Program (USAID-CIS).Al-Hussain Business park, April 2016.
- Member in French university graduate alumni in Jordan.
- PSUT representative years 2015 for Tempus project workshops in Jordan.
- Member in UNESCO UniTwin initiative and Complex System Digital Campus.
- Member of scientific committee for international conferences :

  - Summer Computer Simulation Conference (SCSC), July 11- 14, 2010,

Ottawa, Canada.
- EPNACS 2010 within ECCS'10, Lisbon, Portugal, September 15-16, 2010.
- EPNACS 2011 within ECCS'11, Vienna, Austria, September 14-15, 2011.

- Member in the **Editorial Board** of Journal of Intelligent Computing, Dline.
- Member in the Jordan Engineers Association (JEA).

15. Publications

Book Chapters

1. **Ghnemat R.**, Bertelle C., and Duchamp G.H.E. 2009. Community swarm optimization. *From System Complexity to Emergent Properties. Springer-Verlag Berlin Heidelberg, Understanding Complex Systems series*, *Pages* 195–207.

2. **Ghnemat R.**, Bertelle C., and Duchamp G.H.E. 2009**.** Swarm intelligence for urban dynamics. *Advanced Bio-Inspired Computational Methods.* (ISBN 978-973-7794-77-2), *Pages* 131–137**.**

3. **Ghnemat R.**, Bertelle C., and Duchamp G.H.E. 2009**.** Self-Organization Simulation over Geographical Information Systems Based on Multi-Agent Platform. *Complex systems and Self-Organization Modelling*, *Springer-Verlag Berlin Heidelberg,* Pages: 107-116.

4. **Ghnemat R.**, Oqeili S., Bertelle C. and Duchamp G.H.E. 2006. Automata-Based Adaptive Behavior for Economic Modelling Using Game Theory. *Emergent Properties in Natural and Artificial Dynamical Systems, Springer-Verlag Berlin Heidelberg,* Pages 173-185.

International Journals

1. **Ghnemat R.**, Shaout A. 2016. Hybrid Fuzzy Neural Search Retrieval System. *International Journal of Enterprise Information Systems.* vol. 12, Issue. 3, Pages 78-93, DOI:10.4018/IJEIS.2016070105.

2. Hudaib A., Fakhouri H., **Ghnemat R.** 2016. New methodology for microarray spot segmentation and gene expression analysis. *Scientific Research and Essays,* Vol. 11, No. 12, Pages 126-134, DOI: 10.5897/SRE2015.6378.

3. **Ghnemat R.**, Jaser E. 2015. Classification of Mobile Customers Behavior and Usage Patterns using Self-Organizing Neural Networks .*International Journal of Interactive Mobile Technologies*, Vol .9, No. 4, Pages 4-11, DOI: 10.3991/ijim.v9i4.4392.

4. Al-Shboul M., Rababah O., **Ghnemat R.**, Al-Saqqa, S. 2014. Challenges and Factors Affecting the Implementation of E-Government in Jordan. *Journal of Software Engineering and Applications*, Vol. 7, No. 13, Pages 1111-1127, DOI:

10.4236/jsea.2014.713098.

5. Rababah O, Al-Shboul M, Al-Zaghoul F, **Ghnemat R.** 2014. Website Search Engine Optimization: Geo-graphical and Cultural Point of View. *Journal of Software Engineering and Applications,* vol. 7, No. 13, Pages 1087-1095, DOI: 10.4236/jsea.2014.713096.

6. **Ghnemat R.**, Jaser E. 2014. Toward Mobile Telecommunication Recommendation System through Intelligent Customers Categorization. *International Journal of Computers & Technology,* Vol. 12, No. 7, Pages: 3651-3658.

7. Corson N., Aziz-Alaoui M., **Ghnemat R.**, Balev S., Bertelle C. 2012. Modelling the Dynamics of Complex Interaction Systems: from Morphogeneis to Control*, International Journal of Bifurcation and Chaos,* Vol. 22, No. 2, Pages 1250025(1) - 1250025(20), DOI: 10.1142/S0218127412500253 .

8. Bertelle C., Dutot A., **Ghnemat R.** 2010.Modeling Self-Organization Systems with Social Insects Algorithms, *International Journal Broad Research in Artificial Intelligence and Neuroscience,* Vol. 1, Pages 18-32.

9. **Ghnemat R.**, Bertelle C., Duchamp G.H.E. 2010. Modeling Spatial Organization with Swarm Intelligence Processes, *International Journal of Bio-Inspired Computation (IJBIC)*, Vol. 2, No. 6, Pages 374-382.

10. **Ghnemat R.**, Bertelle C., Duchamp G.H.E.2009. A Methodology for Urban and Land-Use Management Simulation Using Spatial Self-Organization Processes. *Dynamics of Continuous, Discrete and Impulsive Systems journal - series B: Applications and Algorithms,* Vol. 16, No. 4, Pages 501-513.

11. **Ghnemat R.**, Bertelle C., Duchamp G.H.E.2009 Swarm intelligence for urban dynamics modeling, *American Institute of Physics (AIP Journals)*, Vol. 1117 ,Pages 105-115.

International Conferences

1. *Ghnemat R.,* Zaghari R., Atoum J. 2013. Behavioral Segmentation For Web Searching Users Using Self-Organizing Kohonen Maps. *Proceedings of The Second International Conference on e-Technologies and Networks for Development.* ISBN: 978-0-9853483-6-6, Kuala Lumpur, Malaysia, March 4-6, 2013, the Society of Digital Information and Wireless Communication Pages: 114-121.

2. **Ghnemat R.,** Lucchini F., Bertelle C. 2011. Modeling urban cultural systems with the interactive simulation platform Rouants. *Proceedings of MESM'2011, Middle Eastern Simulation and Modelling Conference*, Amman, Jordan, November 14-16, 2011. Pages 96-100.

3. **Ghnemat R.,** Lucchini F., Bertelle C. 2011. Rouants simulation platform to model service user dynamics of cultural sites within urban area. *Proceedings EPNACS 2011, a satellite meeting of ECCS'11,* , Vienna, Austria, September 12-16, 2011, Pages 61-67.

4. **Ghnemat R.** , Bertelle C. , Duchamp G.H.E. 2010. Modeling Urban Dynamics Complexity with Swarm Intelligence processes, *EPNACS'2010 satellite meeting for ECCS'2010 - European Conference on Complex Systems*, Lisbon, Portugal, September 13-18, 2010.

5. Bertelle C., Al-Obaidy M., Ayesh A., **Ghnemat R**. 2010.Interacting wireless sensors networks to spatial emergence for decision making. *Proceeding of 7th IEEE International Conference and Workshops on Engineering of Autonomic and Autonomous Systems (EASe 2010),* University of Oxford, England, March 22-26, 2010. Pages 73-78.

6. **Ghnemat R.,** Bertelle C., Duchamp G.H.E. 2010. Modeling urban services usage with social insect algorithms. *Proceeding of 2nd Asian Simulation Technology Conference (ASTEC'2010)*, Shanghai, China, March 1-3, 2010, Pages 115-122.

7. Bertelle C., Dutot A., **Ghnemat R.** 2009. Applicative issues from self-organized systems based on social insects modelling, presented in *International Symposium in Understanding Intelligent and Complex Systems (UICS)*, Romania, October 22-23, 2009.

8. **Ghnemat R.,** Bertelle C., Duchamp G.H.E.2008. Agent-based modeling using swam intelligence in geographical information systems. *In proceeding of 5th International Conference on Information Technology (ICIT), IEEE,* Al-Ain, UAE, Dec. 16-18, 2008. Pages: 69-73.

9. **Ghnemat R.,** Bertelle C., Duchamp G.H.E. 2008. Managing Spatial Self-organization via Collective Behaviors. *Proceeding of European Simulation and Modelling Conference ESM'2008,* October 27-29, 2008, Le Havre, France, Pages 264-266.

10. **Ghnemat R.,** Lucchini F., Bertelle C. 2008. Urban cultural dynamics modelling using swarm intelligence and geographical information systems, In proceedings of *The 2008 European Simulation and Modelling Conference (ESM2008)*, Le Havre University, France, Oct. 27-29, 2008.Pages: 258-263.

11. **Ghnemat R.,** Bertelle C., Duchamp G.H.E. 2008. Urban Dynamics Modelling using Ant Nest Building, *In proceedings of Middle East Simulation and Modelling (MESM 2008)*, Philadelphia University, Jordan, August 26-28, 2008. Pages : 124-128.

12. **Ghnemat R.,** Bertelle C., Duchamp G.H.E. 2008. Adaptive Spatial System Emergence from Community Swarm Optimization, *In proceedings of Swarm Intelligence Algorithms and Applications Symposium (SIAAS),* Aberdeen, Scotland, April 1-4, 2008.

13. **Ghnemat R.**, Duchamp G.H.E., Bertelle C. 2007. On the use of generalized derangements for Schelling's model of segregation, in proceedings of *ESM'2007*, St Julian's Malta, October 22-24, 2007, Pages 306-308.

14. **Ghnemat R.**, Bertelle C., Duchamp G.H.E. 2007. Adaptive Automata Community Detection and Clustering - A Generic Methodology, In proceedings of WCE'2007, London, U.K., July 2007, Pages 25-30.

15. **Ghnemat R.**, Bertelle C., Duchamp G.H.E. 2007. A Methodology for Ecological Resources Management Simulation using Geographical Information Systems and Interacting Agent Systems, *Eco Summit 2007*, Beijing, China, May 22-27, 2007.

16. **Ghnemat R.**, Bertelle C., Duchamp G.H.E. 2006. Self-organization simulation over geographical information system based on multi-agent platform, *In Proceedings of ESM 2006*, Toulouse, France, October 23-25, 2006. Pages: 420-424

17. Dahmani H., Duchamp G.H.E., **Ghnemat R.**, Hadj-Kacem H., Bertelle C. 2006. Emerging Decision Support System for Geographical Information Systems, *In Proceedings of ECELM-2*, Tigu-Mures, Romania, May 31 - June 3, 2006. Pages 78-90.

18. **Ghnemat R.**, Bertelle C., Duchamp G.H.E., Khatatneh K., Oqeili S. 2005. Automata-Based Adaptive Behavior for Economic Modeling Using Game Theory, *EPNADS'05 within ECCS'05 International Conference,* Paris, France, Nov. 14-18, 2005. Springer Berlin Heidelberg. Pages 171-183.

19. Al-Ruzouq R., **Ghnemat R.** 2004. Data Fusion for Multi-Source Imagery–A case Study of the Amman City, JICCSE 2004, Al-Balqa Applied University, Al-Salt, Jordan, October 2004.

16. Languages

- Arabic: Mother Language

- English: Fluently read, spoken and written

- French: Read and spoken