Curriculum Vitae

Long version (complete)

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Bernard Espinasse

Married, 3 children.
Citizenship: French.
Languages: French (native), English, Spanish (notions).
Current position: Full Professor in Computer Sciences (Exceptional Class) at the Aix-Marseille Université (AMU), Marseille, France.
Teaching: Ecole Polytechnique Universitaire de Marseille (Polytech-Marseille) - School of Engineers.
Research: LIS UMR CNRS 7020 (Laboratory of Computer Sciences and Systems), a joint research laboratory of AMU and National Centre of the Scientific Research, Marseille, France.
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1. ACADEMIC FORMATION

- 1995 **Accreditation to Supervise Researches in Computer Sciences** (Habilitation à Diriger des Recherches en Sciences - HDR), Aix-Marseille University. Dissertation (in French) : « Contribution to Intelligent, Distributed and Cooperatives Information System Engineering » , May 1995.
- 198l **PhD in Information System.** Supervisors: J-L. Le Moigne and B. Munier, GRASCE URA CNRS N°935 – Aix-Marseille University. Dissertation (in French) : « Autonomy and Organizationnal Intelligence : Theoretical Elements and Application to Information System Design ». July 1981.
- 1979 **Research Master** (DEA) in System Analysis and Economic Calculus, Aix-Marseille University.
- 1978 **MBA** (D.E.S.S. CAAE), I.A.E., Aix-Marseille University.
- 1977 **Diploma of Engineer**, Ecole Nationale Supérieure d'Arts et Métiers de Paris (ENSAM).

2. PROFESSIONAL EXPERIENCE

- 96 – present: **Full Professor** in Computer Sciences, Aix-Marseille Université (AMU). *Teaching* at the Ecole Polytechnique Universitaire de Marseille (Polytech-marseille). *Research* at the **LSIS UMR CNRS N°7296** laboratory from 2000 to 2018, leader of INCOD (Distributed Information and Knowledge) team from 1999 to 2008, from 2009 to 2013 leader of the OASIS team (Ontologies, Agents and Services based Information Systems). Since 2018, researcher at the **LIS UMR CNRS 7020** in the R2I team (Information Retrieval and Interactions), Data Sciences Pole.
- 87-96: **Associate Professor** in the Management Information System (MIS) department (MIAGE) of the Applied Economics Faculty, Aix-Marseille University. Research at the GRASCE URA CNRS N°935 (System Analysis and Economic Calculus).
- 88-95: **Scientific Director** of the Systémia Institute (Research and Development and Professional Training), Aix-en-Provence.
- 86-87: **Scientific Responsable** in research and training departement of IIRIAM (International Institut of Robotique et Artificielle Intelligence of Marseille).
- 83-87: **Associate Professor** in the MIS department of the Administration Sciences Faculty, Laval University (Québec – Canada).
- 81-83: **Project manager** in the computer department, COMEX Compagny (Marseille).

3. EXPERTISES

- Member of several local and French committees (including CNU - National Council of French Universities).
- Expert for French national research agency (ANR) on different research programs.
- Expert for Haut Conseil pour la Recherche et l'Enseignement Supérieur (HCERES) for different French research laboratories evaluations.
- Expert for FCAR (Fonds pour la Formation de Chercheurs et l'Aide à la Recherche) for Canada request subsidies evaluation for Canadian researchers.

- Expert for MITACS for evaluation of Canadian researchers' projects for subvention.
- Expert for IRSTEA French Institute for projects evaluation in Decision Support Systems field.
- Expert for PEPS (Projets Exploratoires Premier Soutien) French program (2015).
- Expert for Franco-Brazilian COFECUB program (2014).
- Expert for Excellence Prime for some French Universities (2012 et 2014).
- Participation at several Selection Committee for recruitment of Professors for some French Universities (2015, 2017 and 2019).

4. INVITATIONS

- Invited by the University of Montréal, Département DIRO, Montréal (Canada), Sept. 2017 (Invitation of Pr. G. Lapalme).
- Invited by the University of Porto, LIAAD Lab., Nov. 2017 (Invitation of Pr. P. Brazdil and J. Cordeiro).
- Invited by the Federal University of Pernambuco (UFPE), Centro de Informática, and Federal University Rural of Pernambuco (UFRPE), Recife Brazil (one week in Summer 2007 and in Spring 2008) and a month in spring 2019.
- Invited by the Laval University, Québec (Canada) at the CENTOR lab. (CENtre de recherche sur la Technologie et l'Organisation Réseau for one week in 2000 and in 2004 (Invitation from Pr. Chaib Draa and Pr. S. D'Amours).

5. TEACHING

I mainly teach at the Ecole Polytechnique Universitaire de Marseille (EPUM/Polytech-Marseille). My teaching concerns Database Technology, Information and Decision Support Systems, Software Engineering, Artificial Intelligence, Multiagents Systems, Ontologies and Web semantic.

Syllabus and slides: https://pageperso.lis-lab.fr/bernard.espinasse/index.php/enseignements-teaching/

6. RESEARCH

1. RESEARCH TOPICS

I actively participated to the creation in 2000 of the LSIS UMR CNRS 6168 (Laboratoire des Sciences de l'Information et des Systèmes) research laboratory, an where I was team leader during 15 years. Since 2018, the two research laboratories in computer science of AMU, LSIS and LIF, have merged to give the **LIS** (Laboratoire d'Informatique et Systèmes). Currently I am researcher in the **LIS UMR CNRS 7020**, a laboratory of Aix-Marseille University (AMU), in the "Data Science" Pole. My research topics have evolved over time.

Main keywords: Text mining, Information extraction, machine learning, ontology, multi-agent systems, semantic web, decision support systems, serious games, data warehouses.

CURRENT TOPICS (2012-PRESENT)

My research mainly concerns the proposition of models and software architectures for the design of information systems, adaptive and open Web, favoring the use of ontologies and / or software agents. Ontologies are declarative knowledge shareable, reusable in the design of SI, their architecture, their adaptation, their use. Software agents allow the development of distributed software architecture, scalable and adaptive, and executable models (simulation). Since 2012, my research is organized around two axis: ***Text Mining*** and ***Decision Support.***

Text Mining Axis

Information extraction. Our work first concerned the use of statistical supervised learning techniques in automatic information extraction. We first used the BWI (Boosted Wrapper Induction) algorithm to perform information extraction from collected web pages (Agathe 2 system - 2012). Then we were interested in the use of ontologies in automatic text classification, in particular the interest of conceptualisation using the Rocchio method with the thesis of **S. Albitar** defended in 2013. Our work focused also on the combined use of ontologies and symbolic (or relational) supervised learning, by inductive logic programming (ILP) for the extraction of named entities and especially of (binary) relations between named entities. This led to the development of the OntoILPER system in the framework of **R. Lima** thesis defended in 2014. We continued this work with the use of "triple-store" in its implementation (Research Master thesis of **C.C. Ngo** and **D. Magdy**), and the use of ensemble methods to improve the learning process of the OntoILPER system. We were interested in the extraction of relations by deep learning, in particular by using a vector representation enriched by considering syntactic dependencies at the level of Word Embedding (Master's thesis of **R. Azcurra** and **A. Merad**). An application of this approach to the labelling of spatial roles related to walking trajectories is the subject of **A. Moussa** thesis. Still using deep learning, let us also mention the thesis of **M. Mallek** on the extraction and classification of relations according to the context in unstructured textual documents, and the thesis of **Y. Duperis** (with the Mooben&Roster compagny) on the development of a system to assist in the constitution of consortia of competent companies for a call for tenders with an approach based on language processing and ontologies.

Automatic summarization and text simplification. The thesis of **S. Lamsiyah** concerns unsupervised multi-document summarization based on deep learning, firstly in Generic Multi-Document Summarization (G-MDS) with a centroid approach and different sentence embedding representations, and secondly by exploiting transfer learning from BERT (Bidirectional Encoder Representations from Transformers) fine-tuning on natural language comprehension tasks for sentence representation learning. Concerning Query-Focused Multi-Document Summarization (QF-MDS), we propose an unsupervised extractive method based on transfer learning from pre-trained sentence integration models (BM25 model) combined with the maximal marginal relevance

criterion. Let us also mention the work on the search for coherence in extractive summarization, in particular with the work of the Brazilian master of **R. Garcia**, on a coherent single-document extractive summarization based on integer programming, and more recently, with the work of the Brazilian master of **P. Assis**, on the cohesive single-document extractive summarization based on the semantic representation AMR (Abstract Meaning Representation) of the text to be summarized. Finally, recently and in collaboration with linguists, we are interested in automatic text simplification, in particular with the thesis of **R. Hijazi** on syntactic simplification of texts based on the DMRS (Dependency Minimal Recursion Semantics) graph-based semantic representation and the rewriting of graphs.

Decision Support Axis

On this axis, our work focuses on the design of decision support systems by modeling (multi-modeling) and agent-oriented simulation, and data warehouses with ontology use. Our main contributions concern on the one hand the processes of elaboration and integration of these models in this context of multi-modeling, and on the other hand the implementation of these models in software architectures allowing to execute and integrate distributed simulations, with or without the use of ontologies. This work was first developed in the framework of the thesis of **A. Oulhaci** (2014) on participatory agent-based simulation in the resolution of conflicting collective problems and the training of crisis management stakeholders (Games serious - Serious games). We then turned our attention to the evaluation and adaptation of a serious game environment with the thesis of **I. Daoudi** (2020). In parallel with this work, with the thesis of **L. El Sarraj** (2014), we were interested in assisting the use of a health data warehouse by using ontologies linked to the data of the warehouses and existing operating resources, as part of a research conducted with the Public Assistance of Marseilles Hospitals.

OLD RESEARCH TOPICS (2007-2014)

After 2007, my research work, carried out at the LSIS, is developing along two axes: the design of adaptive information extraction IS from texts and the design of decisional information systems.

Design of adaptive IS for information extraction from texts. In this area, my work focuses on the collection of contextual information on the Web, with first of all the proposal, in collaboration with the Federal University of Pernambuco (UFPE, Recife, Brazil), of a generic software architecture Agathe (Agent GATHEring). This architecture collects information on restricted domains of the Web, domains to which ontologies are associated. It is composed of software agents exploiting, in a cooperative way and by symbolic rules (Jess production rules), domain ontologies to carry out a semantic classification of pages collected on the Web, as well as an information extraction of these Web pages **[RJ 09.1][RJ 09.2][RJ 08.2][IC 08.1][IC 08.2][NC 07].**

In order to make this architecture more adaptive, especially in information extraction, a task which requires a large investment of human domain experts to be carried out by symbolic rules, we are interested in adaptive extraction techniques, based on statistical supervised learning. We have thus integrated into our Agathe software architecture extractor induction techniques using the BWI (Boosted Wrapper Induction) algorithm and have obtained encouraging results **[RJ 12.1][CH 11][IC 10.5][IC 10.1][IC 10.3].** My latest work concerns first the semantic classification of texts using ontologies (S. Albitar's thesis) with the publications **[IC 14.2][IC 12.4][IC 12.2][IC 12.1][IC 12.5][IC 12.4][IC 12.2][IC 12.1]**, then the Ontology-Based Information Extraction (R. Lima's thesis), in which we use a semantic classification of texts to identify the most relevant information. Lima), in which we use inductive logic programming (symbolic or relational learning, not statistical learning) to generate symbolic information extraction rules and then populate a domain ontology. Related publications are **[IC 15.1][IC 14.1][IC 13.7][IC 13.4]**

Design of decision support information systems. My work focuses first of all on decision support based on agent-based simulation and requiring multi-modelling. This multi-modelling may involve different semantics and scales of time and space, which need to be integrated in order to allow a generally distributed simulation. My main contributions concern methodological frameworks related to the elaboration and integration of these models in this multi-modelling context, as well as their implementation in software architectures allowing the execution and integration of distributed simulations. Thus, we have proposed a multi-agent modelling methodological framework for the modelling and simulation of logistic chains, in particular in a context of mass customisation - thesis **O. Labarthe [RJ 05.2][RJ 06][RJ 07]IC 07.3][IC 04][IC 03.2].** We have also proposed a conceptual and operational framework for the integration of spatio-dynamic models, taking into account different thematic semantics and scale levels, and leading to the specification of specific integration models in **E.Maillé** thesis **[IC 05.1][IC 06.3][IC 07.4].** Concerning software architectures, in the **J. Serment** thesis we proposed a generic software infrastructure based on agents and services, allowing the integration, processing and exploitation of data necessary for environmental decision support **[RJ 08.1][IC 06.4][IC 05.2]**. In the framework of E. Maillé's thesis, we proposed another generic integration software infrastructure allowing the integration of spatial dynamics simulators taking into account different thematic semantics and scale levels **[RJ 11.1][RJ 11.2][RJ 10][RJ 09.3].** This infrastructure consists of software agents cooperating with a geographic IS (GIS) in the integration process, a process driven by explicitly specified integration models. We have also been interested in the integration of dynamic models associated with different levels of organisation nested in supply chains - **K. Mustapha** thesis **[IC 10.2].**

Still around the use of multi-agent systems, we are currently interested in the use of these systems for the development of "serious games" applied to crisis management, within the framework of a CIFRE grant with the SII Company – thesis of **A. Oulhaci**. This work led to the publications **[IC 15.1][IC 13.5][IC 13.2][IC 13.1][IC 12.3].** More recently, I am also interested in data warehouse-based decision systems. Through a collaboration with the Assistance Publique Hospitalière de Marseille – thesis of **L. El Sarraj**, we are trying to develop a system to assist in the operation of a data warehouse for hospital management, a system driven by three ontologies linked to the domain, to the structure of the warehouse and to the existing exploitation resources of the warehouse. This work led to the publications **[RJ 14.1][IC 13.6][IC 13.3][NC 11.3][NC 11.2].**

OLD RESEARCH TOPICS (1995-2007)

During this period, my work at DIAM and LSIS has focused on the multi-agent approach and has developed along two lines: *agent-based modelling and simulation for decision support* and *cooperative information systems (CIS) engineering*.

Agent-based modelling and simulation for decision support. In this area, my research work is associated with the use of multi-agent systems (MAS) in the development of ADIS for the resolution of complex problems. This "agent" orientation is found first of all in agent-based modelling (or even multi-modelling). These agent-based models generally operationalise individual-centred models associated with the problem faced by the decision-maker, and may involve deliberative and/or reactive agents. They lead to simulations that structure the interaction between the decision-maker and these models, and allow him, for example, to iteratively evaluate different scenarios. My contributions are both at the methodological level, for the development of agent models, and at the software engineering level, in the development of a multi-agent platform adapted to the development of SIAD.

This team platform, which has been used to develop several prototypes in the context of theses or contracts, adopts the FIPA (Foundations of Intelligent Physical Agents) standards, particularly for its communication language, integrates the JESS/Clips inference engine, and is then integrated into the Jade multi-agent platform. More precisely, my contributions on this axis concern: (i) the proposal and implementation of multicriteria decision support methods and techniques for a group of decision makers (extension of Prométhée) **[RJ 97.2]**, (ii) the proposal and implementation of repair solutions methods and techniques in the case of reactive workshop reordering - thesis of **E. Tranvouez [RJ 98][OS 01.2]**, and finally (iii) the simulation of management scenarios of an anthropised ecosystem - thesis of **N. Franchesquin** - in the framework of the Simfonhyc project (in collaboration with the DESMID CNRS and supported by the PACA region) **[IC 01.3] [IC 00.2] [IC 03.1] [RJ 05.1]**. During this period I was strongly involved in the international workshop "Agent Based Simulation (ABS)", in the CNRS STIC Specific Action "VERSIM - Towards a theory of simulation", and in the GDR I3 (GT 3.2 "MIMOSA - Individual-centred modelling and simulation").

Engineering of cooperative information systems. Building on the achievements of the previous axis, I am interested from 99 in the implementation of this agent approach in the engineering of Cooperative IS. Thus, with some French colleagues, we wrote a book chapter devoted to agent-oriented cooperative IS (AOIS - Agents Oriented Information Systems) **[CH 01.1].** My contributions on this axis start around the coordination of the distributed manufacturing company by a multi-agent approach (thesis of **L. Cloutier**) **[RJ 01][IC 99.6][IC 99.5][IC 99.4].** We proposed an agent coordination framework, CAT (Convention - Agreement - Transaction), strongly inspired by the theory of contracts in microeconomics.

OLD RESEARCH TOPICS (1980-1995)

This period covers my thesis, my participation in the development of the Merise method, my four years spent at Laval University, my career as a lecturer and ends when I join the DIAM laboratory, submit my HDR and become a University Professor. My research work is focused on two areas: Information Systems Engineering and Knowledge-based Interactive Decision Support Systems (IDSS) Engineering.

Information systems engineering. My thesis **[THE 81],** "Autonomy and organisational intelligence: theoretical elements and applications to the design of intelligent information systems", proposes a conceptual and modelling framework for the design of IS. Some of these elements will be found in the foundations of the Merise method. At the same time, I participated in the development of this method within the team led by H. Tardieu (INRIA contract), contributing more particularly to the modelling of IS dynamics, for which we proposed a modelling framework with several levels of abstraction as well as a formalism, inspired by Petri nets, allowing the elaboration of processing models at these different levels **[RJ 81].** At Laval University, I am interested in the increasing complexity of enterprise IS, and in the incorporation of more knowledge into these systems **[OS 86].**

Back in France in 1987, with Dominique Nanci, we proposed in Merise extensions made necessary by the increasing complexity of the IS to be designed, and by the evolution of the functionalities of the tools supporting them (DBMS, L4G, client-server, etc.). These extensions were published in a first book by Sybex in 1992 (3 editions) **[BK 92],** and in a second book published by Vuibert in 2001 (very substantial revisions and new contributors) **[BK 01].** They consist in particular of an adjustment of the Merise modelling framework and the associated formalisms, in particular of the Entity-Relationship formalism (types/subtypes, intra and inter-relationship semantic integrity constraints,...). Then I contribute to a deeper evolution of Merise towards the object, by proposing a methodological framework, Merise+, articulated around 3 models (classes, modules and dynamics) allowing to approach the design of the computerized IS (logical and physical levels) with an operational coupling of Merise with the object method OMT **[RJ 97.1][RJ 95][RJ 94.6].** Finally, in the early 90s, I also participated in research work with the company Transpac on the implementation of electronic data interchange (E.D.I.), by proposing methodological elements inspired by the Merise method (REDI method) **[NC 91.3],** and I participated as an expert in interministerial reflections on IS design.

Engineering of knowledge-oriented IS. My work on this axis began during my stay at Laval University. It concerns the representation and processing of knowledge for decision support, and the mastery of AI tools, in particular the "Snark" inference engine through a collaboration with Jean Louis Laurière, in particular its rewriting in Pascal UCSD. I use this engine to develop a prototype of an expert system in the field of risk estimation in life insurance, in collaboration with a Canadian insurance company **[RJ 86].** During this period I also developed a specific conceptual and epistemological reflection inspired by the work of J. Piaget in order to propose a new, more cognitive model of decision making **[CH 87]**. This model approaches decision-making processes as cognitive processes of acquisition and organisation of knowledge, which are either associative (perceptive, intuitive) or symbolic (logic, reasoning) in nature **[NC 87.1].** Within the framework of this model, I am interested in the computer simulation of these cognitive processes through the cooperation of two major approaches to cognitive simulations on computers: symbolic AI and connectionism. I thus try to make these two approaches cooperate by developing a hybrid system, named Cogita,

cooperating (cooperative hybridization) a multilayer neuro-mimetic network with gradient back-propagation learning, and a symbolic inference engine (Snark) **[RJ 94.1][IC 90.2].** The implementation of these connectionist models, and the realization of this cooperative hybridization, posed me then (at the beginning of 90) important problems of technical nature, but also methodological and conceptual. These problems lead me to consider, in 1988, this cooperative hybridisation as too ambitious to conceive and realise. I then decided to focus on an essentially symbolic cognitive simulation, trying to take advantage of new approaches that were beginning to develop in the scientific community: Distributed AI (DAI) and multi-agent systems (MAS). Thus, from 1990 onwards, I oriented my work towards a multi-agent-oriented engineering of DAIS, focusing in particular on group decision support and negotiation. Thus, I developed methods, models and multi-agent prototypes for professional assessment assistance, and for group multicriteria negotiation assistance. **[RJ 94.2][IC 93.5][IC 95.1].**

MAIN RESPONSABILITIES IN MY RESEARCH LABORATORY

- Member of the Laboratory Council (2000-2018).
- Member of the Scientific Orientations Council (2000-2018).
- Leader of the INCOD (Distributed Information and Knowledge) team (20 researchers, 2000-2008).
- Leader of the OASIS (Agents and Services oriented Information Systems) tean (15 researchers, 2009-2014).

2. RESEARCH SUPERVISING

Total summary

- 1 Post-Doctorate supervision
- 17 supervisions of PhD Thesis **defended** whose one in cotutelle with Laval University (Canada), and one Sandwich-Thesis with UFPE (Brazil), and one in co-direction of Université de Fez, Maroc.
- 4 supervisions of PhD Thesis **in progress,**
- More than 30 supervisions of Master Thesis.

PhD Thesis in progress

1. **A. Moussa**, « Etiquetage de rôles spatiaux par apprentissage profond basé sur des représentations vectorielles enrichies ». Thesis in cotutelle AMU/Université de la Manouba (ENSI), Tunisie. Supervision with S. Fournier and S. Faiz. Defence planned in 2022.
2. **Y. Duperis**, « Recommandation d'emplois par apprentissage profond basé sur des phrases clés ». AMU Thesis - CIFRE. Supervision with A. Chifu and S. Fournier. Defence planned in 2022.
3. **M. Mallek**, « Extraction et classification selon le contexte de relations entre entités dans des documents textuels non structurés ». Thesis in cotutelle AMU/Université de la Manouba (ENSI), Tunisie. Supervision with W. Lejouad Chaari. Defence planned in 2022.
4. **R. Hijazi**, « Simplification syntaxique de textes en langue anglaise à base de représentations sémantiques en DMRS (Dependency Minimal Recursion Semantics) et réécriture de graphes ». AMU Thesis. Supervision with N. Gala. Defence planned in 2022.

PhD Thesis defended

1. **S. Lamsiyah**, « Deep Learning-Based Unsupervised Extractive Methods for Multi-Document Summarization». Thesis of the Université de Fez, Maroc. Supervision with S. Ouatk El Alaoui. Defended the 4th Dec. 2021.
2. **I. Daoudi**, « De l'évaluation à l'adaptation d'un environnement de jeu sérieux: application à la gestion de crise ». Thèse en cotutelle avec l'Université de la Manouba (ENSI), Tunisie. Supervision with E. Tranvouez and W. Lejouad Chaari. Defended the 15th Dec. 2020.
3. **R. Lima,** « OntoILPER : An Ontology and Inductive Logic Programming-based Method to Extract Instances of Entities and Relations from Texts ». Sandwich Thesis of UFPE in computer sciences - Université Fédérale du PErnambuco. Recife, Brazil. Supervision with F. Freitas. Defended the August 20, 2014.
4. **L. El Sarraj**, « Aide à la décision autour d'un entrepôt de données de santé / Decision Making arround Health Data Warehouse ». AMU Thesis. Supervision with T. Libourel. Defended the July 12, 2014.
5. **A. Oulahaci**, « Modélisation et Simulation Orienté Agent de Comportements Humains dans un Jeu Sérieux (Serious Game) : application à l'apprentissage de procédures en Gestion de Crises ». AMU Thesis. Supervision with E. Tranvouez. Defended the June 20, 2014.
6. **S. Albitar**, « On the Use of Semantics in Supervised Text Classification: Application in the Medical Domain ». AMU Thesis. Supervision with S. Fournier. Defended the December 21, 2013.
7. **K. Mustapha**, « Une architecture logicielle pour la simulation à base d'agents de chaînes logistiques/ A Software Architecture for Supply Chains Simulation ». AMU Thesis. Supervision with E. Tranvouez. Defended the October 20, 2011.
8. **E. Maille**, « Intégration conceptuelle et opérationnelle de modèles spatio-dynamiques. Application à la dynamique du risque lié à l'incendie de forêt/ Conceptual and Operational Integration of Spatio-Dynamic Models ». AMU thesis Defended the July 4, 2008.
9. **J. Serment**, « Une infrastructure d'intégration multi-agents pour le développement de systèmes d'aide à la décision environnementale: application à la gestion hydraulique de la Camargue/An Agents-based Integration Infrastructure for Environmental DSS: application to the Hydraulic Management of the Camargue ». AMU thesis. Supervision with E.

Tranvouez. Defended the February 13, 2007.

10. **O. Labarthe**, « Modélisation et simulation orientées agents de chaînes logistiques dans un contexte de personnalisation de masse: Modèles et cadre méthodologique/ Agent based Modelling and Simulation of Supply Chains in a Mass Customised Context: Models and Methodological Framework ». Cotutelle Thesis between Univ. d'Aix-Marseille and Laval University (Québec - Canada). Supervision with B. Montreuil. Defended the October 30, 2006.
11. **T. Moyaux**, « Design, simulation and analysis of collaborative strategies in multi-agent systems: The case of supply chain management ». Thèse en informatique de l'Université Laval (Québec - Canada). Supervision with B. Chaib-Draa, S. D'Amours. Defended the November 5, 2004.
12. **N. Franchesquin**, « Modélisation et simulation multi-agents d'écosystèmes anthropisés : une application à la gestion hydraulique en Grande Camargue/ Multiagent Modelling and Simulation of the Hydraulic management of the Camargue ». AMU Thesis. Defended the December, 12, 2001.
13. **E. Tranvouez**, « Intelligence artificielle distribuée et ordonnancement : une approche coopérative du réordonnacement d'atelier par systèmes multi-agents/Distributed Artificial Intelligence and Scheduling: an cooperative approach ». Defended the May 23, 2001.
14. **L. Cloutier**, « Contribution to the Manufacturing Enterprise Coordination with a Multiagents Approach based on Contract Theory ». Supervision with P. Lefrançois. Defended the June 11, 1999.
15. **L-M. Spinosa**, « Contribution à la modélisation d'entreprises manufacturières distribuées fondée sur une approche multi-agents / Contribution to the Enterprise Modelling based on a Multiagents Approach ». AMU Thesis. Defended the October 7, 1996.
16. **I. Grégoire**, « Contribution à la conception et à la réalisation d'un Système à tableaux noirs distribué essentiel SYNODE/ Contribution to the design and the reuse of a Distributed Black Board, SYNODE ». AMU Thesis. Supervision with E. Chouraqui. Defended the January 6, 1996.
17. **F. Laban**, « Sur la modélisation des systèmes d'information organisationnels intelligents », Thèse de troisième cycle, GRASCE/CNRS, Thèse de l'Université Aix-Marseille 3, soutenue le 18 décembre 1989. AMU Thesis. Supervision with J.L. Le Moigne. Defended the January 6, 1996.

Master Thesis defended

1. **R. Camelo**, « Representations Learning ». Supervision with Rinaldo Lima, in progress (2022).
2. **R. Azcurra**, « Extraction automatique de relations d'un document par apprentissage profond avec prise en compte des dépendances syntaxiques ». Supervision with Adrian Chifu, S. Fournier, 2018.
3. **A. Merad**, « De l'usage de l'apprentissage profond au traitement automatique des langues: application à l'extraction de relations ». Supervision with Adrian Chifu, S. Fournier, 2017.
4. **R. Garcia**, « Coherent Single-Document Summarization using Integer Linear Programing ». Master of UFRPE (Recife, Brésil) Supervision with R. Lima (UFRPE), 2017.
5. **D. Magdy**, « Opérationnalisation du système d'extraction d'information OntoILPER concernant sa phase d'application par l'intégration d'un triple-store ». Supervision with R. Lima (UFRPE). 2016.
6. **C.C. Ngo**, « Extraction supervisée d'information par apprentissage symbolique en Programmation Logique Inductive : Application des méthodes d'ensemble à OntoILPER ». Supervision with R. Lima (UFRPE). 2015.
7. **H. Hamdan**, « Classification et extraction d'information de documents par apprentissage et à base d'ontologie de domaine ». Supervision with P. Bellot, 2012.
8. **S. Ghenimi**, « Approche ontologique de l'intégration conceptuelle de modèles spatio-dynamiques/ Ontological Approach of the Conceptual Integration of Spatio-dynamic Models », Supervision with E. Maillé, 2010.
9. **S. Albitar**, « Extraction d'information dans des pages Web semi-structurées par apprentissage supervise/ Information Extraction of Web Pages by Supervised Machine Learning ». Supervision with S. Fournier, 2009.
10. **M. Fakhri**, « Définition d'un système de personnalisation à base d'ontologies/ Definition of A Personalized Systembased on Ontologies ». Supervision with C. Cauvet, 2009.
11. **R. Lima**, « Une extraction d'information adaptative de pages web par induction supervisée d'extracteurs/ An Adaptive Information Extraction of Web Pages by Supervised Induction of Wrappers », Co-supervisor with F. Freitas, Universidade Federal de Pernambuco (UFPE), Brésil, 2009.
12. **A. Kettabi**, « Stockage et exploitation d'information extraite du Web par le système AGATHE/ Storage and Exploitation of Extracted Information from Web with AGATHE System », 2008.
13. **Y. Benharrous**, « Recherche d'information coopérative à base d'agents/ Agents based Cooperative Information Retrieval ». Supervision with F. Freitas, Universidade Federal de Pernambuco (UFPE), Brésil, 2006.
14. **G. Aventini,** « Aide à la supervision de réseau de distribution électrique à base d'agents/ Support to Power Supply Networks Supervision ». Supervision with F. Viera-Turnell, Universidade Federal de Campina Grande, Brésil, 2004.
15. **F. Alazard**, « Tropos et les services Web sémantiques/ Tropos and Sematic Web Services », 2004.
16. **E. Maillé**, « Couplage entre Systèmes Multi-Agents et Systèmes d'Information Géographique en modélisation et simulation de systèmes complexes spatialisés/ Coupling of Multiagents Systems and Geographic Information Systems in Modeling and Simulation of Complex Spatialised Systems », 2003.
17. **H. Chadli**, « Spécification des besoins orientée agent : de la dépendance de buts entre les agents à une architecture d'intégration de composants agentifiée », Supervision with E. Tranvouez, 2003.
18. **J-L. Ferrier**, « Intégration de "legacy systems" par une approche agent/ Legacy Systems Integration: an Agents Approach », 2002.
19. **J Serment**, «Négociation dans les systèmes multi-agents/ Negotiation in Multiagents Systems », DEA MCAO, 2001.
20. 20**O. Labarthe**, «Modélisation multi-agents de chaînes logistiques/ Multiagents Modelling of Supply Chains », DEA

Productique et informatique, Univ. Aix-Marseille 3, 2000.

21. **T. Moyaux**, «Modélisation des interactions dans les systèmes multi-agents/ Integrations Modelling in Multiagents Systems », 2000.
22. **J-P. Chirac**, «Contribution à une plate-forme multi-agents/ Contribution to a Multiagents Platform », 1998.
23. **B. Beaumont**, «Etude et mise en œuvre de la plate-forme multi-agents "Agent K"/ Study and Use of AGENT K Multiagents Plateform », 1996.

3. THESIS COMMITTEE MEMBER

- 43 PhD Thesis committees as reporter.
- 26 PhD Thesis committees as examinator.
- 6 HDR committees (Accreditation to Supervise Researches in Computer Sciences) as reporter.
- 5 HDR committees de HDR as examinator.

4. JOURNAL COMMITTEE

Member of editorial boards

- JDS - Journal of Decision Systems, Lavoisier Ed., Paris.
- RIA – Revue d'Intelligence Artificielle, Lavoisier Ed., Paris.
- IJIDS - International Journal of Information and Decision Sciences, Inderscience Publishers.

Reviewer for

- EIS - Enterprise Information Systems, Taylor & Francis Publishers.
- IJSMP - International Journal of Simulation and Process Modelling, InderScience Publishers.
- ISI - Ingénierie des Systèmes d'Information, Hermés Ed., Paris (membre du comité de lecture d'un numéro spécial).
- JAMAS, Journal of Autonomous Agents and Multi-Agent Systems, Springer Netherlands.
- JESA - Journal Européen des Systèmes Automatisés, Hermés Ed., Paris.
- SIMPRA - Simulation Modelling Practice and Theory International Journal, Elsevier Publishers.
- SIMULATION - Transactions of The Society for Modeling and Simulation International.

5. INTERNATIONAL CONFERENCE PROGRAM COMMITTEE MEMBER (SINCE 2004)

- Participation to Program Committees of the following international conferences : WI 2022, WI 2021, 2020, 2019, 2018, 2017, 2016, 2015, 2014, 2013, 2012, 2011 ; CoDIT 2013 ; IEEE-RCIS 2012, 2011, 2010, 2009, 2008; AAMAS 2009 ; ADS 2011, 2010, 2009, 2008, 2007, 2006; ABS 2004, 2003 ; SIMUTools 2009, 2008, 2007; NOTERE 2009, ECMS 2008, 2007, 2006; SCSC'07; IMSM07-CMS 2007; AOIS 2006, 2005, 2004 ; Intelli 2016, 2015 ; SysCo 2016, 2014, …
- Co-Chair with Helder Coehlo, of the PC of the 5th International Workshop ABS'2004, 5th International Workshop « Agents Based Simulation », SCS-Europe, Lisbonne, May 2004.
- Participation at numerous Program Committees of national conferences.

6. RESEACH CONTRACTS (RESPONSIBILITY SINCE 1995)

- ***CLIC&GO*** project (2009-2010): Study for the development of a Web site for business with geographical functionalities as spatial reasoning. Study performed by the OASIS team of LSIS and financed by CARNOT-STAR Institut (**26 K€).** Responsability: monting and coordination of the project. Publications: one national conference.
- ***SIMFONHYC*** project (1999-2003): « Simulation du fonctionnement hydraulique de la Camargue/Simulation of the Camargue Hydraulic Functionning », Study in order to represent interactions between hydraulic management and ecosystem behavior. Partners: DESMID-CNRS and LSIS laboratories. Subventioned by the Regional Council of the "Provence Alpes et Côte d'Azur" region (**137,2 K€**). Responsabilty: monting and coordination of the project. Publications: one international journal, 3 international conferences and one national conference.
- ***POSEIDON*** project (1997-2001), CNRS Program "PROSPER". Concerned the design by reuse of the product information system supporting management of technical data on products. Subventioned by the CNRS on 3 years with a global budget of **130 K€** (50K€ for LSIS). Partners: GILCO-INPG, CRISTO-CNRS, LSR-INPG, LSIS, SCHNEIDER ELECTRIC, PCO. Responsabilty: participation to monting and coordination of the project. Publications: 2 national conferences and one journal.
- ***MERISE+*** project (1993-1995) subventioned by French Industry Minister (Informatique 92 program). Study of 18 month concerning a coupling between methods Merise and Hood. The global budjet was **198,2 K€**. Partners: Aix-Marseille University, Systémia Institute (coordinateur), Ingénia and Cecima. Responsabilty: participation to monting and coordination of the project. Publications: 2 national conferences and one journal. Publications: one national conference and one journal.
- ***BRITE/EURAM N°4390*** european project (1991-1994), concern the development of an integrated system of flexible prefabrication for personalized architectonic façade. Partners: Armines (Ecole des Mines d'Alès), Systémia Institute, GTM Group (leader partner), Robotesca (Bilbao-Espagne), ITIN Group (Milan-Italie) and Aix-Marseille University. Global budget: **195,2 K€** financed at 50% by European Union (EU). Responsabilty: participation to monting and coordination of the project. Publications: several condential report for EU.

In addition, participation to others contracts.

7. PUBLICATIONS

Summary

	Publications (Since 1981)
PhD Thesis	**1**
Accreditation to supervise research (HDR)	**1**
Papers in Referenced Journals (RJ)	**27**
Papers in Un-Referenced Journals (J)	**4**
Chapter in books (CH)	**13**
Edition of Proceedings (EP)	**1**
Text Books (TB)	**2**
International Conferences (IC)	**84**
National Conferences (NC)	**22**
TOTAL	**156**

1. REFERENCED JOURNALS WITH SELECTION COMMITTEE (RJ)

1. [RJ 21.1] S. Lamsiyah, A. El Mahdaouy, B. Espinasse and S. Ouatik El Alaoui, « Unsupervised Extractive Multi- Document Summarization Method based on Transfer Learning from BERT Multi-Task Fine-Tuning », in: Journal of Information Science (**JIS**), Sages Edidor, 2021- https://doi.org/10.1177/0165551521990616
2. [RJ 21.2] S. Lamsiyah, A. El Mahdaouy, B. Espinasse and S. Ouatik El Alaoui, « An Unsupervised Method for Extractive Multi-Document Summarization based on Centroid Approach and Sentence Embeddings », in: Expert Systems with Applications, An International Journal (**ESWA**), Elsevier, vol. 167, page 114152, 2021.
3. [RJ 20.1] S. Lamsiyah, A. El Mahdaouy, S. Ouatik El Alaoui, and **B. Espinasse**, Unsupervised query-focused multi-document summarization based on transfer learning from sentence embedding models, BM25 model, and maximal marginal relevance criterion, in: Journal of Ambient Intelligence and Humanized Computing (**JAIHC**), https://doi.org/10.1007/s12652-021-03165-1.
4. [RJ 19.1] R. Lima, B. Espinasse, F. Freitas (2019), « A logic-based relational learning approach to relation extraction: The OntoILPER system », in: Engineering Applications of Artificial Intelligence (**EAAI**) Journal, Elsevier. Vol. 78C, pp. 142-157. 2019.
5. [RJ 17.2] I. Daoudi, R. Chebil, E. Tranvouez, W. Lejouad-Chaari, B. Espinasse (2017), « Towards a Grid for Characterizing and Evaluating Crisis Management Serious Games: A Survey of the Current State of Art », **International Journal of Information Systems for Crisis Response and Management**, Vol. 9, Issue 3, pp. 76-95, July-September 2017.
6. [RJ 17.1] R. Lima, B. Espinasse, F. Freitas (2017), « An Ontology-and inductive logic programming-based system to extract entities and relations from text ». Knowledge and Information System (**KAIS**) Journal, Springer-Verlag, v. 54, p. 1-33, Springer-Verlag, 2017. https://doi.org/10.1007/s10115-017-1108-3.
7. [RJ 16.1] B. Espinasse, R. Lima, F. Freitas (2016), « Extraction automatique d'entités et de relations par ontologies et programmation logique inductive », in: ***Revue d'Intelligence Artificielle (RIA)***, Vol. 30 (n° 6/2016), dec 2016 (Répertoriée Scopus et DBLP).
8. [RJ 14.2] L. El Sarraj, B. Espinasse, T. Libourel (2014), « An Ontology-Driven Personalization Approach for Data Warehouse Exploitation », in: ***International Journal on Advances in Software (IJAS)***, vol 7 no 1 & 2, 2014, http://www.iariajournals.org/software/
9. [RJ 14.1] A. Oulhaci, E. Tranvouez, S. Fournier, B. Espinasse (2014), « A MultiAgent Architecture for Collaborative Serious Game applied to Crisis Management Training: Improving Adaptability of Non-Played Characters », in: ***EAI Endorsed Transactions on Serious Games Journal***, Vol. 2, pp. 11, ISBN: 2034-8800, http://eudl.eu/doi/10.4108/sg.1.2.e7.
10. [RJ 12.1] B. Espinasse, R. Lima, S. Albitar, S. Fournier, F. Freitas (2012), « Extraction adaptative d'information de pages Web par règles d'extraction induites par apprentissage », in: ***Revue d'Intelligence Artificielle (RIA)***, Vol. 26 (n° 6/2012), pp. 643-678, dec 2012. *(Répertoriée Scopus et DBLP).*

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11. [RJ 11.2] E. Maillé, B. Espinasse (2011), « Micropolis, une simulation orientée agent de la dynamique d'urbanisation discontinue de territoires soumis au risque d'incendie de forêt », in : ***Revue d'Intelligence Artificielle (RIA),*** numéro « Simulation Sociale », 2011, 25 (1), pp. 109-134. *(Répertoriée Scopus).*
12. [RJ 11.1] E. Maillé, B. Espinasse (2011), « Pyroxene: a Territorial Decision Support System Based on Spatial Simulators Integration for Forest Fire Risk Management », ***International Journal of Agricultural and Environmental Information Systems (IJAEIS),*** Vol. 2, Issue 2/ 2011. 21 pages, 2011. *(Répertoriée Compendex, DBLP, et INSPEC).*
13. [RJ 10] E. Maillé, B. Espinasse (2010), « Un outil de modélisation intégrée de la dynamique du risque d'incendie de forêt pour l'aide à la planification territoriale », in: ***Journal of Decision Systems (JDS),*** dec. 2010. Vol. 20/1, 2011, pp.71-102 *(Répertoriée Scopus et DBLP).*
14. [RJ 09.3] E. Maillé, B. Espinasse, S. Fournier, « Des agents spatiaux multi-échelle pour l'intégration multi-échelle de modèles de dynamiques spatiales », in: ***Revue Internationale de Géomatique – International Journal of Geomatics and Spatial Analysis,*** Lavoisier Ed ., Vol. 19, n°4/déc. 2009, pp. 523-549. *(Répertoriée ProQuest).*
15. [RJ 09.2] B. Espinasse, S. Fournier, Fred Freitas (2009), « AGATHE: An Agent- and Ontology-Based System for Gathering Information about Restricted Web Domains », in: ***International Journal of E-Business Research (IJEBR),*** vol. 5, n° 3, pp. 14-34, Juillet-Septembre 2009. *(Répertoriée Scopus).*
16. [RJ 09.1] B. Espinasse, S. Fournier, Fred Freitas (2009), « Collecte d'information sur domaines restreints du Web à base d'agents et d'ontologie : le système AGATHE », in: ***Revue d'Intelligence Artificielle (RIA),*** Numéro spécial « Intelligence artificielle et web intelligence », sous la direction de Y. Demazeau et L. Vercouter, vol. 23, n°1/2009, pp. 81-113. *(Répertoriée Scopus et DBLP).*
17. [RJ 08.2] F. Freitas, L. Cabral, R. Lima, B. Espinasse, E. Palmeira, S. Fournier, G. Bittencourt (2008), « From MASTER-Web to AGATHE: the evolution of an architecture for manipulating information over the Web using ontologies », in: ***RECIIS***, vol. 2, n° 1, pp. 73-84, 2008. *(Répertoriée LatIndex).*

18. [RJ 08.1] J. Serment, B. Espinasse, E. Tranvouez (2008), « Systèmes d'Aide à la Décision Environnementale », in: ***Journal of Decision Systems (JDS),*** vol. 17, n°2 / 2008, pp. 269 - 300, April - June 2008. *(Répertoriée Scopus et DBLP).*
19. [RJ 07] O. Labarthe, B. Espinasse, A. Ferrarini, B. Montreuil (2007), « Toward a methodological framework for agent-based modelling and simulation of supply chains in a mass customization context », ***Simulation Modelling Practice and Theory International Journal (SIMPAT),*** Volume 15 - issue 2 - pp.113-136. *(Répertoriée ISI Web Of Knowledge - Impact Factor : 0.753).*
20. [RJ 06] O. Labarthe, A. Ferrarini, B. Espinasse, B. Montreuil (2006), « Multi-Agent Modelling for Simulation of Customer-Centric Supply Chain », in: ***International Journal of Simulation & Process Modelling (IJSPM),*** special issue : Supply Chain Modelling and Simulation, Vol. 2, Nos. 3/4, pp.150-163. *(Répertoriée Scopus).)*
21. [RJ 05.2] O. Labarthe, B. Espinasse, A. Ferrarini, B. Montreuil (2005), « A Methodological Approach for Agent Based Simulation of Mass Customizing Supply Chains », in: ***Journal of Decision Systems (JDS),*** vol. 14, n° 4, pp. 397 – 425. *(Répertoriée Scopus et DBLP).*
22. [RJ 05.1] B. Espinasse, N. Franchesquin (2005), « Multiagent Modelling and Simulation of the Hydraulic Management of the Camargue », in: ***SIMULATION: Transactions of The Society for Modeling and Simulation International***, vol. 81, n° 3, pp. 201-221. *(Répertoriée ISI Web of Knowledge).*
23. [RJ 01] L. Cloutier, J.-M. Frayret, S. D'amours, B. Espinasse, B. Montreuil (2001), « A Commitment-Oriented Framework for Networked Manufacturing Co-ordination », in: ***International Journal of Computer Integrated Manufacturing (IJCIM),*** vol. 14, n° 6, pp. 522-534. *(Répertoriée ISI Web of Knowledge).*
24. [RJ 98] B. Espinasse, E. Tranvouez (1998), « Ordonnancement d'atelier coopératif et réactif : une approche multi-agents », *Journal of Decision Systems (JDS),* Vol. 7, Summer 1998, special issue, Hermès Editeur, pp. 215-239. *(Répertoriée Scopus et DBLP).*
25. [RJ 97.2] B. Espinasse, G. Picolet, E. Chouraqui (1997), « Negotiation Support Systems: a Multi-Criteria and Multi-Agent Approach », European ***Journal of Operational Research (EJOR),*** feature Issues in Artificial Intelligence Tools for Decision Support Systems, Elsevier Sciences éditeur, Vol.103, n°2, dec. 97, pp. 389-409. *(Répertoriée ISI Web of Knowledge).*
26. [RJ 97.1] B. Espinasse, D. Nanci (1997) « Merise et l'approche orientée objet : du couplage avec OMT à une troisième génération », ***Revue Ingénierie des Systèmes d'Information / Networking and Information Systems,***, Hermès Editeur, Vol.5, n°4, oct. 97. pp. 311-339. *(Répertoriée Base Pascal de l'INIST-CNRS).*
27. [RJ 95] B. Espinasse, M. Lai, D. Nanci (1995) « Merise+ : Une extension de la méthode MERISE à l'approche objet par un apport de la méthode HOOD », ***Revue Ingénierie des Systèmes d'Information / Networking and Information Systems,*** Hermès Editeur, Vol. 3, n°2-3, 1995, pp. 301-325. *(Répertoriée Base Pascal de l'INIST-CNRS).*
28. [RJ 94.2] B. Espinasse (1994), « Un système interactif d'aide au bilan professionnel : de la synthèse à la collaboration », *Revue des* ***Journal of Decision Systems (JDS),*** Vol. 3, n°1, 1994, Hermès Editeur, pp. 7-28. *(Répertoriée Scopus et DBLP).*
29. [RJ 94.1] B. Espinasse (1994), « A Cognitivist Model for Decision Support: COGITA Project, a Problem Formulation Assistant », ***Decision Support Systems, the International Journal***, N. H. Elsevier éditeur, N°12, 1994, pp. 277-286. *(Répertoriée ISI Web Of Knowledge).*
30. [RJ 86] G. Bernier, B. Espinasse, D. Lafrance (1986), « Systèmes experts pour la sélection des risques en assurance-vie », ***Assurance*** (Revue trimestrielle consacrée à l'étude théorique et pratique de l'assurance au Canada), ISSN 0004-6027, n°3, octobre 86, pp. 451-456.

2. JOURNALS WITH SELECTION COMMITTEE (J)

1. [J 17.1] B. Espinasse, P. Bellot (2017), « Introduction au Big-Data: opportunités, stockage et analyse des mégadonnées », in : **Dossiers Techniques de l'Ingénieur (DTI).** 21 pages, février 2017.
2. [J 14.1] L. El Sarraj, B. Espinasse, T. Libourel (2014), « An Ontology-Driven Personalization Approach for Data Warehouse Exploitation », in: **International Journal on Advances in Software (IJAS)**, vol 7 no 1 & 2, year 2014, http://www.iariajournals.org/software/
3. [J 14.2] A. Oulhaci, E. Tranvouez, S. Fournier, B. Espinasse (2014), « A MultiAgent Architecture for Collaborative Serious Game applied to Crisis Management Training: Improving Adaptability of Non Played Characters » , in : **EAI Endorsed Transactions on Serious Games Journal**, Vol. 2, pp. 11, ISBN: 2034-8800, http://eudl.eu/doi/10.4108/sg.1.2.e7
4. [J 11.3] L. El Sarraj, S. Rodier, B. Espinasse (2011), « Entrepôt de données autour du PMSI pour le pilotage d'établissements hospitaliers », **Techniques Hospitalières**, TH 729, Sept.-Oct. 2011, pp. 49-52.

3. PROCEEDINGS EDITION (PE)

[PE 04] H. Coelho, B. Espinasse Eds., Proceeding of the 5th International Workshop on Agent-Based Simulation – ABS04, May 3-5, 2004, Lisbon, Portugal. SCS publication, n° ISBN 3-936150-31-1.

4. TEXT BOOKS (TB)

[OV 01] Nanci D., B. Espinasse avec la collaboration de B. Cohen, J.C. Asselborn et H. Heckenroth (2001), « Ingénierie des systèmes d'information : Merise deuxième génération », Informatique, Paris. ISBN : 2-7117-8674-9 (416 pages). Préface de J. L. Le Moigne et H. Tardieu.

[OV 92] D. Nanci, B. Espinasse avec la collaboration de B.Cohen et H.Heckenroth (2001), Ingéniérie des systèmes d'information avec Merise : vers une deuxième génération, Editions SYBEX, Paris (685 pages) Préface de J.-L.Le Moigne et H.Tardieu (3 éditions).

5. BOOK CHAPTERS (CH)

1. [CH 21] A. Moussa, S. Fournier, K. Mahmoudi, B. Espinasse, S. Faiz, « On the use of deep learning for Geodata Enrichments », in Interdisciplinary Approaches to Spatial Optimization Issues, IGI Global book chapter, 2021. DOI: 10.4018/978-1-7998-1954-7.ch010
2. [CH 20] S. Lamsiyah, A. El Mahdaouy, B. Espinasse and S. Ouatik El Alaoui. « Unsupervised Query-Focused Multi-Document Summarization using uSIF Sentence Em- bedding Model and Maximal Marginal Relevance Criterions ». In: Ezziyyani M. (eds) Advanced Intelligent Systems for Sustainable Development. (Extended version from AI2SD 2020 paper). Advances in Intelligent Systems and Computing, Springer.
3. [CH 19] S. Lamsiyah, A. El Mahdaouy, B. Espinasse and S. Ouatik El Alaoui. « A Supervised Method for Extractive Single Document Summarization Based on Sentence Embeddings and Neural Networks ». In: Ezziyyani M. (eds) Advanced Intelligent Systems for

Sustainable Development. (Extended version from AI2SD 2019 paper). Advances in Intelligent Systems and Computing, vol 1105. Springer, Cham.

Before 2012

4. [CH 10] B. Espinasse, S. Fournier, F. Freitas, S. Albitar, R. Lima, « AGATHE-2: An Adaptive, Ontology-based Information Gathering Multi-agent System for Restricted Web Domains » , in : Hershey, PA: IGI Global, E-Business Applications for Product Development and Competitive Growth: Emerging Technologies, Lee, I., dec. 2010.
5. [CH 08.4] T. Monteiro, D. Anciaux, S. D'amours, B. Espinasse, A. Ferrarini, O. Labarthe, Benoit Montreuil, Daniel Roy, « Simulation à base d'agents des systèmes de coordination et de planification des réseaux d'entreprises », in: LAVOISIER - HERMES (Ed.), « La simulation pour la gestion des chaînes logistiques », Traité IC2, série systèmes automatisés, Caroline Thierry André Thomas et Gérard Bel, ch. 7, pp. 227 - 260, août 2008.
6. [CH 08.3] T. Monteiro, D. Anciaux, B. Espinasse, A. Ferrarini, O. Labarthe, Benoit Montreuil, Daniel Roy, « L'intérêt des agents pour la simulation de la chaîne logistique », in: LAVOISIER - HERMES (Ed.), « La simulation pour la gestion des chaînes logistiques », Traité IC2, série systèmes automatisés, C. Thierry – A. Thomas – G. Bel, ch. 6, pp. 193-226, août 2008.
7. [CH 08.2] T. Monteiro, D. Anciaux, B. Espinasse, A. Ferrarini, O. Labarthe, D. Roy, « Chapter 6. The Interest of Agents for Supply Chain Simulation », in: Wiley-ISTE (Ed.), « Simulation for Supply Chain Management », C. Thierry – A. Thomas – G. Bel, septembre 2008. ISBN: 978-1-84821-090-5.
8. [CH 08.1] T. Monteiro, D. Anciaux, S. D'amours, B. Espinasse, A. Ferrarini, O. Labarthe, D. Roy, « Agent-based Simulation of Business Network Planning and Coordination Systems », in: Wiley-ISTE (Ed.), « Supply Chain Management Simulation: An Overview », C. Thierry – A. Thomas – G. Bel, ch. 7, septembre 2008. ISBN: 978-1-84821-090-5.
9. [CH 01.2] F. Ounar, E. Tranvouez, B. Espinasse, L. Ladet, (2001) chapitre 4 : Pilotage par tentative d'ajustement du plan prévisionnel, In Pilotage des systèmes de production, Hermés Ed., ISBN 2-7462-0514-9, pp. 27-61.
10. [CH 01.1] D. Hérin, B. Espinasse, E. Andonoff, C. Hanachi, (2001) chapitre 8 : Des systèmes d'information coopératifs aux agents informationnels. In Ingénierie des systèmes d'information. Hermés Ed., ISBN 2-7462-0219-0, pp. 209-244.
11. [CH 98] B. Espinasse, L. Cloutier, P. Lefrançois (1998) A Coordination Framework for Intelligent Agents in the Distributed Enterprise , in Globalization of Manufacturing in the Digital Communications Era of the 21st Century : Innovation, Agility and the Virtual Enterprise, Edited by G.Jacucci, G.J.Olling, K.Preiss, M.Wozny, Kluwer Academic Publishers, pp 565-578.
12. [CH 87] B. Espinasse, D. Pascot, « Decision Support Systems, a Knowledge Oriented Approach », in Economics and Artificial Intelligence, Pergamon Press 1987, édité par J. -L. Le Moigne et J. -L. Ross.
13. [CH 86] B. Espinasse, R. Mantha, « Bases de données relationnelles et connaissances », in *Bases de données, Le relationnel: mythe et réalité*, Editions Eyrolles 1986, édité par A. Flory et M. Bouzeghoub.

6. PAPERS IN SELECTIVE INTERNATIONAL CONFERENCES

1. [IC 22.1] I. Nascimento, R. Lima, A. Chifu, B. Espinasse, S. Fournier, « DeepREF: A Framework for Optimized Deep Learning-based Relation Classification », 13th Conference on Language Resources and Evaluation, **LREC2022**, Marseille, 20 - 25 June 2022.
2. [IC 21.2] A. Moussa, S. Fournier, K. Mahmoudi, B. Espinasse, S. Faiz, « Spatial Role Labeling System Capturing Both Characters and Word Information Using BiLSTM and CRF », **MDAI 2021 (**Core Rank B).
3. [IC 21.1] A. Moussa, S. Fournier, K. Mahmoudi, B. Espinasse, S. Faiz, « Spatial Role Labeling based on Improved Pre-trained Word Embeddings and Transfer Learning », **KES 2021 (**Core Rank B).
4. [IC 20.5] S. Lamsiyah, A. El Mahdaouy, B. Espinasse and S. Ouatik El Alaoui, « Unsupervised Query-Focused Multi-Document Summarization using uSIF Sentence Embedding Model and Maximal Marginal Relevance Criterion », long paper, **AI2SD'2020** - International Conference on Advanced Intelligent Systems, Marrakech - Morocco, 21-26 december 2020.
5. [IC 20.4] M. Paixao, R. Lima, B.Espinasse, « Fake News Classification and Topic Modeling in Brazilian Portugues », **WI-IAT'2020** , IEEE/WIC/ACM International Joint Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT'20), 14-17 December 2020 - A Fully Virtual Conference.
6. [IC 20.3] M. Mallek, S. Fournier, R. Guetari, B. Espinasse and W. Lejouad Chaari, « An Unsupervised Approach for Precise Context Identification from Unstructured Text Documents », **ICTAI2020** - 32th International Conference on Tools with Artificial Intelligence, November 09-11, 2020, Virtual Conference.
7. [IC 20.2] I. Daoudi, E. Tranvouez, R. Chebil, B. Espinasse, and W. Lejouad-Chaari, « An EDM-based Multimodal Method for Assessing Learners' Affective States in Collaborative Crisis Management Serious Games », Proceedings of The 13th International Conference on Educational Data Mining, **EDM 2020**, July 10-13, Fully virtual conference.
8. [IC 20.1] F. Rodrigues, R. Lima, W. Domingues, R. Fidalgo, A. Chifu, B. Espinasse, S. Fournier, « DeepNLPF: A Framework for Integrating Third-Party NLP Tools », 12th Conference on Language Resources and Evaluation, **LREC2020**, Marseille, 11 - 16 May 2020.
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