

Personal information

First and last names : Jean MARTINET
Birth date and place : November 11, 1978 in Mopti (MALI)
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Education

Since Dec. 2005 : **Postdoctoral position** at National Institute of Informatics, Tokyo, Japan.
Sept. 2004 - Aug. 2005 : **Assistant lecturer and researcher**,
CLIPS-IMAG laboratory (UMR CNRS/UJF/INPG 5524)
University of Grenoble II.
28 Jan. 2005 **Qualified to be a lecturer**, CNU section 27 – Computer Science.
Oct. 2001 - Dec. 2004 : **PhD candidate in Computer Science**,
Subject : "A relational vector space model of information retrieval
adapted to images".
Advisors : Prof. Yves Chiaramella, Dr. Philippe Mulhem.
CLIPS-IMAG Laboratory (UMR CNRS/UJF/INPG 5524)
Joseph Fourier University, Grenoble I. (Government grant)
Aug. 31 - Sept. 5, 2003 : European Summer School on Information Retrieval (ESSIR'03)
Aussois, France.
June 2001 : **M.Sc. in Computer Science, Systems and Cognition**,
Joseph Fourier University, Grenoble I.
Sept. 1996 - June 2000 : **B.Sc. in Mathematics, Computing applied to Sciences**,
Joseph Fourier University, Grenoble I.

Current position

Since December 2005, I am a **postdoctoral researcher** in the group of Prof. Shin'ichi SATOH, in the Multimedia Information Research Division of **National Institute of Informatics (NII)** in Tokyo, Japan. I have been awarded a 24-month postdoctoral fellowship grant from the Japan Society for the Promotion of Science, until November 2007. My research activities are in the domain of multimedia information indexing and retrieval, namely from image and video documents.

PhD works

- **Title** : Un modèle vectoriel relationnel de recherche d'information adapté aux images.
- **Abstract** : The increase of digital image acquisition devices, combined to the growth of the Web, requires the definition of Information Retrieval (IR) models and systems providing fast access to images searched by users among large amounts of data. The aim of our work is to define an IR model suited to images, integrating a rich semantics for representing these visual data as well as users' queries, while allowing the application to large corpora. Our proposal merges the vector space model of IR – a widely tested model in textual IR – with the Conceptual Graph (CG) formalism, based on the use of star graphs (a star graph is an elementary CG made up of a single relation connected to some concepts representing image objects) as image descriptors. A novel weighting scheme (based on objects size, position, and image heterogeneity) is defined and carefully validated in the experiments. We show that integrating relations into the vector space model through star graphs increases the system precision, and that the results are comparable with graph projection systems, while decreasing the processing time for users' queries.
- **Keywords** : Information Retrieval, Image Indexing, Vector Space Model, Conceptual Graph, Weighting Scheme, Evaluation.
- **Defense date** : December 22, 2004.
- **Laboratory** : CLIPS-IMAG, Grenoble.
- **Committee members** :
 - **President** : Miss Catherine GARBAY
 - **External reviewers** : Mr Jean-Marie PINON, Mr Mohand BOUGHANEM
 - **Advisors** : Mr Yves CHIARAMELLA, Mr Philippe MULHEM.

Publications

International Journals

1. (submitted) **Multimedia objects for user-centered similarity matching**, Jean Martinet, Yves Chiaramella, Philippe Mulhem, Shin'ichi Satoh, submitted to Multimedia Tools and Applications Journal, Special Issue on "Semantic Multimedia".
2. (submitted) **A relational vector space model using advanced weighting scheme of image retrieval**, Jean Martinet, Yves Chiaramella, Philippe Mulhem, submitted to Information Processing and Management (IPM).

International Conferences

1. **Image-based Quizzes from News Video Archives**, Masanori Sano, Nobuyuki Yagi, Jean Martinet, Norio Katayama and Shin'ichi Satoh, IEEE International Conference on Multimedia & Expo, Beijing, China - July 2-5, 2007.
2. **A study of intra-modal association rules for visual modality representation**, Jean Martinet, Shin'ichi Satoh, IEEE International Workshop on Content-Based Multimedia Indexing (CBMI'07), Bordeaux, France, pp –, June 25-27, 2007, to appear.
3. **Using visual-textual mutual information for inter-modal document indexing**, Jean Martinet, Shin'ichi Satoh, 29th BCS-IRSG European Conference on Information Retrieval Research (ECIR'07),

Rome, Italy, pp –, April, 2007, to appear (61/220 = 28% of acceptance rate).

4. **An information theoretic approach for automatic document annotation from inter-modal analysis**, Jean Martinet, Shin'ichi Satoh, Twentieth Joint Conference on Artificial Intelligence (IJ-CAI'07), Workshop on Multimodal Information Retrieval, Hyderabad, India - January 6-12, 2007 (10/31 = 32% of acceptance rate).
5. **A Model for Weighting Image Objects in Home Photographs**, Jean Martinet, Yves Chiaramella, and Philippe Mulhem, ACM Fourteenth Conference on Information and Knowledge Management (CIKM'05), Bremen, Germany, pp760-767, October 31 - November 5, 2005 (76/425 = 18% of acceptance rate).
6. **Photograph indexing and retrieval using star-graphs**, Jean Martinet and Yves Chiaramella and Philippe Mulhem and Iadh Ounis, IEEE International Workshop on Content-Based Multimedia Indexing (CBMI'03), Rennes, France, pp335-341, September 22-24, 2003.
7. **A weighting scheme for star-graphs**, Jean Martinet and Iadh Ounis and Yves Chiaramella and Philippe Mulhem, 25th BCS-IRSG European Conference on Information Retrieval Research (ECIR'03), Pisa, Italy, pp 546-554, April 14-16, 2003.

National Conferences in French

1. **Annotation automatique de documents par analyse intermodale**, Jean Martinet, Journées Scientifiques Francophones (JSF'06), Tokyo, Japan - Dec. 1, 2006.
2. **Un modèle vectoriel étendu de recherche d'information adapté aux images**, Jean Martinet and Yves Chiaramella and Philippe Mulhem, 20ème Congrès INFORSID'02 (Informatique des Organisations et Systèmes d'Information et de Décision), Nantes, France, pp337-348, June 4-7, 2002.

Other communications

1. **Statistical correlation of visual data and semantics, a brief survey**, Jean Martinet, Internal report, National Institute of Informatics, March 29, 2006.
2. **Inter-modal analysis for automatic document annotation**, NII-Mag, August, 2006 (in Japanese).
3. **A relational vector-space model of information retrieval adapted to images**, Jean Martinet, ACM SIGIR Forum 39(1) :62, June, 2005.

Seminars

1. **Multimedia document annotation from inter-modal analysis**, IRISA, Rennes, November 14, 2006.
2. **Information theoretic approaches to inter-modal analysis**, NII, Tokyo, November 1, 2006.
3. **Extending the Vector-Space Model using Conceptual Graphs**, IR Group, Glasgow, November 25, 2002.

PhD thesis

1. **Un modèle vectoriel relationnel de recherche d'information adapté aux images**, Jean Martinet, PhD thesis, MRIM-CLIPS-IMAG, Grenoble, France, December 2004

M.Sc. thesis

1. **Un modèle vectoriel de recherche d'information pour les images**, Jean Martinet, M.Sc. thesis, MRIM-CLIPS-IMAG, Grenoble, France, June 2001

International research internships

- July 2002 - Dec. 2002 : **Doctoral internship** in the Information Retrieval Group of the University of Glasgow.
EURODOC Programme (Rhône-Alpes region).
Advisors : Prof. Keith Van Rijsbergen, Dr. Iadh Ounis.
University of Glasgow, Scotland, UK.
- March 2001 - Sept. 2001 : M.Sc. internship : "**A vector space model of image retrieval**".
Advisors : Prof. Yves Chiaramella, Dr. Philippe Mulhem,
Dr. Mohan Kankhanalli.
School of Computing, National University of Singapore, Singapore.
- Aug. 1999 - Sept. 2000 : M.Sc. internship : "**ANN applied to handwriting recognition**".
Laboratoire d'Informatique des Systèmes Adaptatifs,
Advisor : Prof. Yoshua Bengio.
University of Montreal, Canada.

Teaching

- Advanced Programming level 1 and 2 (M.Sc. level, engineering course) 120h, Joseph Fourier University, Grenoble I; Polytech Engineering School, Grenoble I
- Human-Computer Interaction : introduction to software ergonomics (M.Sc. course) 26h, Joseph Fourier University, Grenoble I
- Operating Systems (M.Sc. course) 15h, Joseph Fourier University, Grenoble I
- Functional Programming (B.Sc. course) 32h, Joseph Fourier University, Grenoble I
- Office suite (B.Sc. course) 88h, Grenoble II

Advising activities

PhD

- **Co-advising** Mr Masanori Sano. Subject : "Automatic quiz generation from video archives". Main advisor : Prof. Shin'ichi Satoh. Since March 2006.

M.Sc.

- **Advising** Mr Kittipong Thanasoontornlerk. Subject : "A comparative study of segmentation algorithms for video key-frames". Oct. 2006 – Dec. 2006.
- **Advising** Mr Yutthana Lila. Subject : "Statistical study of spacial occurrence correlations between image regions". Since Apr. 2007.

Involvement in research projects

- **ISERE (Inter-Media Semantic Extracting and Reasoning)**
 - Description : ISERE project was aimed on one part at developing fundamental research actions on semantic extraction, reasoning, and the fusion of multimedia data, and on the other part the application of these research results mainly in domains with social impacts that are distance learning, automatic surveillance, and medical domain.
 - Funding : STIC-Asia (2004-2006)
 - Members : MICA Center - Vietnam ; IPAL, I2R, NUS - Singapore ; CLIPS, IRIT, INRIA - France ; NII - Japan ; NTU, NCKU-Taiwan.
 - Participation as a project researcher.
- **MoSAIC (Mobile Search and Annotation using Images in Context)**
 - Description : the objective of MoSAIC project is to develop a mobile framework for accessing and annotating images in context. The use of camera mobile phones and geographical localization devices such as GPS will make it possible for a user to interact with a central server through visual queries enriched with contextual informations. A possible scenario is the access to tourist information regarding an interest place (building, street, square, monuments, etc.) by submitting a photograph of this place as well as geographic information.
 - Funding : STIC-Asia (2006-2008)
 - Members : MICA Center - Vietnam ; IPAL, I2R, NUS - Singapore ; CLIPS, IRIT, INRIA - France ; NII - Japan ; NTU, NCKU-Taiwan.
 - Participation as a project researcher.

International collaborations

- **Collaboration with Dr. Iadh OUNIS, University of Glasgow, Scotland, UK** : collaboration in the form of a joint research during a 6-month doctoral internship in the Information Retrieval Group of Prof. Keith Van Rijsbergen of the University of Glasgow. I have investigated during this internship the definition of a weighting scheme for star graphs used as image descriptors.
- **Collaboration with Prof. Shin'ichi SATOH, National Institute of Informatics, Tokyo, Japan** : collaboration in the form of a joint research during my 24-month postdoctoral visit to the National Institute of Informatics. I am currently interested in multimedia semantic descriptors generation from cross-media and intra-media analysis.
- **Collaboration with Prof. Vincent ORIA, New Jersey Institute of Technology, USA** : collaboration in the form of a joint project proposal to be submitted to the National Science Foundation. This research project deals with multimedia data analysis and processing. My involvement in this project involves the statistical learning part for the signal-semantic matching.

Other activities

- **Organizing committee** for the COntférence en Recherche d'Informations et Applications (CO-RIA'05), Grenoble, France, 9-11 March, 2005.
- **Programme committee** of the Rencontres Jeunes Chercheurs en Recherche d'Information (RJ-CRI'07), Saint-Étienne, France, 28-30 March, 2007.

- **Participation in the meetings** of the Research Gatherings “Information, Signal, Images et ViSion” (GDR ISIS) and “Information - Interaction - Intelligence” (GDR I^3) in 2003 et 2004.
- **President of the organizing committee** of MidiSciences conferences (wide-audience scientific dissemination), Grenoble, France, 2003-2004.
- **Reviewer** for the conference Pacific Rim International Conference on Artificial Intelligence (PRICAI’06), Guilin, China, 7- 11 August, 2006.
- **Reviewer** for the conference IEEE International Conference on Multimedia & Expo (ICME’06), Toronto, Canada, 9-12 July, 2006.
- **Reviewer** for the international conference MultiMedia Modeling (MMM’07), Singapore, 9-12 January 2007.

Languages

- French : mother tongue.
- English : fluent.
- Japanese : spoken.
- Spanish : average level.

Miscellaneous

- Car and motorbike driving license for France and Japan.
- I have lived for 13 years in West Africa (Mali, Burkina Faso and Niger), 13 months in Montreal (Quebec, Canada), 6 months in Singapore, 6 months in Glasgow (Scotland, UK), and 17 months in Tokyo (Japan).
- Sports : Swimming, Rock climbing, Cross-country skying, Multi-sports raids, Paragliding, Capoeira.

References

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