

Nicolas James

CONTACT INFORMATION

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Single, born on 10th October 1980 in Rouen (Upper Normandy, France)
French nationality
French driving licence

EDUCATION

Ecole Centrale Paris, Châtenay-Malabry, Île-de-France, France

March 2007 – December 2010

Doctor of Philosophy, PhD (Not Defended)

Integration of a priori knowledge for semantic image annotation with large vocabularies

Advisors: Dr Céline Hudelot and Pr Marc Aiguier

Research Interests: Multimedia indexing and retrieval, multimedia automatic annotation and annotation refinement, multi-modal information extraction, link analysis, graph mining, natural language processing, machine learning and particularly its application to image retrieval with semantic problem.

Software programming activities: Image annotation and retrieval software, knowledge management, large datasets processing, image processing, natural language processing, machine learning.

Referees: **Dr Céline Hudelot**
Assistant Professor
Ecole Centrale Paris
Châtenay-Malabry, France
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Pr Marc Aiguier
Professor
Ecole Centrale Paris
Châtenay-Malabry, France
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e-mail: *marc.aiguier@ecp.fr*

University of Rouen, Rouen, Upper Normandy, France

September 2004 – September 2006

Master of Science in Mathematics and Computer Engineering

Master's thesis: Experimental implementation of Web Services technologies for disseminating and sharing photo-interpretation information.

End of studies project: a web software solution for enriching and managing data with a RAD (Rapid Active Development) of XHTML formulaires dedicated to data integration - A.C.S. Acquisition Content System.

University of Rouen, Rouen, Upper Normandy, France

September 2003 – September 2004

Licence of Science in Mathematics and Computer Engineering

Lycée Jehan Ango, Dieppe, Upper Normandy, France

July 2000

Baccalauréat of Science, specialty Mathematics

PUBLICATIONS

- [1] K. Todorov, N. James, and C. Hudelot. Multimedia ontology matching by using visual and textual modalities. *Journal of Multimedia Tools and Applications*, pages 1–25, 2011.
- [2] N. James, K. Todorov, and C. Hudelot. Combining visual and textual modalities for multimedia ontology matching. In *5th International Conference on Semantic and Digital Media Technologies, SAMT 2010, Saarbrücken, Germany*, 2010.
- [3] N. James, K. Todorov, and C. Hudelot. Ontology matching for the semantic annotation of images. In *2010 IEEE International conference on Fuzzy Systems, FUZZ-IEEE 2010, Barcelona, Spain*, pages 2499–2506, 2010.
- [4] N. James, K. Todorov, and C. Hudelot. Enabling interoperability between multimedia resources: An ontology matching perspective. *WISMA-2010, 11th International Workshop of the Multimedia Metadata Community*, pages 39 – 46, 2010.
- [5] N. James and C. Hudelot. Towards semantic image annotation with keyword disambiguation using semantic and visual knowledge. In *The IJCAI workshop CIAM 2009*, pages 35–40, 2009.

PROFESSIONAL EXPERIENCE

Space Applications Services, Zaventem, Brussels, Belgium

March 2011 – present

Software and knowledge engineer

- Rapid REsponse support server project (RARE): development of an extensible, ontology-based resolving service for generic Earth Observation (EO) resources, which integrates existing EO facilities via standardized protocols and provides to users a web interface for textual search via a free-text querying mechanism and graphical navigation. The platform engaged in this project is a distributed software system accessible through a Web-based user interface that allows searching for available EO-related resources and in particular for the products that are generated in the context of the GMES (Global Monitoring Environment and Security) initiative.
Keywords: Natural Language Processing, ontologies and knowledge management, data acquisition through standardized OGC (Open Geospatial Consortium) services, indexation, search processes using knowledge bases.

Ecole Centrale Paris, Châtenay-Malabry, Île-de-France, France

March 2007 – Septembre 2009

Research engineer

Research engineer for the POPS, Peta Operation Per Second, project and the FAME2 project from the SYSTEM@TIC PARIS-REGION Cluster.

- The POPS project: Design and development of data processing systems suited to the largest spectrum of High Performance Computing applications, targeting the Petaflops range. Anticipate the programming tools and features needed to obtain efficient applications in such systems. Involved in the Part 5: Information Modelisation - Content Management and Processing.
Design, specification and development of an access and an automatic adaptation platform of video content. The adaptations are based on user preferences and hardware capabilities. The platform is based on Web Services, WebLab and VLC / Videolan.
Deliverables:
 - C. Hudelot, N. James, O. Soualah, Démonstration des solutions d’extension VideoLAN pour une diffusion intelligente du flux multimédia, Projet POPS, sous-projet 5, livrable 5.18, 2009.
 - C. Hudelot, N. James, Spécifications des extensions de la solution VideoLAN pour une diffusion intelligente du flux multimédia, Projet POPS, sous-projet 5, livrable 5.09, 2008.

Keywords: Web Services, WebLab, VLC, VideoLan, Universal Multimedia Access (UMA), Content Adaptation, MPEG-7, MPEG-21.

- The FAME2 project: High performance computing for simulation and complex data archiving, depends on the design of software engines based on a large server, with the development of a demonstrator.

Involved in the Part 4, Applications in simulation and data processing, Sub-Part 3, Evolution of the XML database engine, Applications in Genomic and Multimedia Databases.

- N. James, Spécification pour la mise en place d'un Web Service, Projet FAME2, sous-projet 4, tâche 4.3.5, 2007.

Keywords: XML-native databases, XediX, VLC, VideoLan, MPEG-7.

Referees:	Dr Céline Hudelot Assistant Professor Ecole Centrale Paris Châtenay-Malabry, France phone: <i>available on request</i> e-mail: <i>celine.hudelot@ecp.fr</i>	Helene Huard de la Marre Project Manager Ecole Centrale Paris Châtenay-Malabry, France phone: <i>available on request</i> e-mail: <i>helene.huard@ecp.fr</i>
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Ecole Centrale Paris, Châtenay-Malabry, Île-de-France, France

2007 – 2010

Teacher for undergraduate and postgraduate courses in Computer Science

Teacher for undergraduate and postgraduate courses in Computer Science including algorithmic, graph theory, modelisation in the Object paradigm, programming (Python and Java). Supervisor for several student projects including a Master internship in Computer Science.

- *Teaching activities*

- ECP, Graph theory, 2010 march, 4h30.
- ECP, Algorithmic and Programming, first year, 2009 sept-nov, 30h.
- ECP, Advanced Systems (Systèmes Avancés, SA), Java Programming, 2008 jan-mar, 29h.
- ECP, Advanced Systems (Systèmes Avancés, SA), Java Programming, 2008 sept-oct, 29h.
- ECP, Information Technologies (Technologies de l'Information, TI), Modelisation and Object Oriented Programming, 2007 sept-oct, 36h.

- *Supervision*

- ECP, first year project, some projects of Ejeux 2009 & 2010.
- O. Soualah, EnrichedVOD: A platform for the delivery of rich and personalized multimedia content, Master's thesis, 2009.
- ECP, TI option, third year project, Multimedia content adaptation, 2008.
- ECP, TI option, third year project, Backup Peer-to-peer, 2008.
- ECP, first year project (enjeu IC-09), La norme MPEG7 et la recherche d'information multimédia: vers une standardisation ?, 2008.

EADS, European Aeronautic Defense and Space Company, Val-de-Reuil, Eure, France

March – September 2006

Software Engineer - Master degree internship

Experimental implementation of Web Services technologies for disseminating and sharing photo-interpretation information.

Keywords: Web Services, Knowledge management, Photo-interpretation, Human-Machine interface, Visualization.

SAFIG MDP, Rouen, Upper Normandy, France

Some days by week during June 2001 – January 2007

Data capture operator

Data capture in the banking domain.

MAE, Rouen, Upper Normandy, France

August 2002 & August 2005

Data capture operator

Data capture in the insurance domain.

FNAC - Librairie Tour du Monde, Paris, Île-de-France, France

August – September 2000

Data capture operator

Data capture in the literary domain.

SOFTWARE

- **WNXplorer**: an interactive and graph-based navigation software for the WordNet database.
- **TAMARA**: WordNet visualization application and toolbox. WordNet 3.0 is entirely indexed in a Lucene index, this allows to add payloads to synsets or update the synsets (adding co-occurrence information or statistical information, defining new semantic relations etc.), and to add new synsets.
- **Galatee**: a Java library (Galatee) and an application (DatasetExplorer) for exploring large collections of annotated images.
- **LabelMeWorkbench**: a toolbox for (1) create indices of the annotations of the LabelMe dataset, (2) browse the dataset, and (3) perform queries on the indices.
- **Avalon**: a MPEG-7 video annotator (manual descriptions based on the VideoSegment MPEG-7 element).
- **RSSHFA**: a GNU/Linux tool for allowing the establishment of SSH connections from anywhere to a server behind a NAT or a too restrictive firewall (for example firewalls that does not accept incoming connections).
- **Bouquinoscope**: a book cover image search engine and collection builder over the Amazon web services.
- **ReqHunter**: A requirements manager tool. The purpose of this software is to manage a database of requirements (such as User Requirements, Software Requirements etc.), to enable the import of requirements by parsing MS-Word documents (e.g. project deliverables) and to produce templated MS-Word or OpenDocument documents (e.g. categorized list of requirements, traceability matrix etc.).

PROGRAMMING

UNIX and GNU/Linux programming (including System Programming), system administration (GNU/Linux)
Parallel computing, C, C++, Matlab, Unix shell scripting, Python
Java (SE, EE), Eclipse, Java GUI (strong knowledge of Swing and AWT)
Java Web development (Web Services, Servlet/JSP), Lucene, WebLab
XHTML / SVG / CSS / JavaScript / AJAX / PHP / XML / XSD / XSL / RDF(a) / OWL
Relational, XML-native and XML-enabled databases (Oracle, MySQL, MonetDB, Berkeley DBXML)
OpenGL, OpenCV, ImageJ, JUNG, Apache Batik
MPEG-7, MPEG-21, VLC, GStreamer
Subversion, git, L^AT_EX, MS-Office, OpenOffice, GIMP, Inkscape

LANGUAGES

French (mother tongue), English (fluent), Spanish (notions)

PERSONAL INTERESTS AND HOBBIES

Literature, writing.
Introductory courses to the GNU/Linux Operating System and community.
Internet culture, cinema (particularly old movies).
Hiking. Travelling. Cooking.
I play guitar since 10 years (mainly jazz and blues music).
All kind of cultural activities.