

Dr. CLEMENT JONQUET

PhD in Informatics

CONTACT & PROFESSIONAL SITUATION

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I have completed my PhD in Informatics from University Montpellier 2 (UM2), France in November 2006. Since September 2007, I am a postdoctoral scholar of the **Stanford Center for Biomedical Informatics Research** (BMIR), Stanford University.

Born May 26, 1980, Nîmes (Gard), France, married, one baby, French nationality.

EDUCATION

- 2006: **PhD in Informatics/Computer Science** (First class with distinction) – UM2
- 2003: MSc in Computer Science (2.1 honours) – UM2 (~ French DEA & Maîtrise)
- 2001: BSc in Computer Science (2.2 honours) – UM2 (~ French Licence & DEUG)
- 1998: High School Diploma specialized in Maths (2.2 honours) – Uzès (Gard) (~ French Baccalauréat Scientifique)

WORK EXPERIENCE

- *Since Sept. 2007*: **Postdoctoral scholar, Stanford University, USA.**
- *2006-2007*: Temporary Assistant Professor, University Montpellier 3, France (humanities and social sciences) (~ French ATER).
- *2003-2006*: French government PhD grant & young lecturer at UM2 (sciences and techniques) (~ French ‘allocataire MENRT’* & ‘moniteur CIES’).

RESEARCH ACTIVITY

RESEARCH LABS

- *Since Sept. 2007*: Stanford Center for Biomedical Informatics Research (BMIR)[†] within Pr. Mark A. Musen's group at Stanford University. I am working with the National Center for Biomedical Ontology (NCBO) group.
- *2003-2007*: Laboratory of Informatics, Robotics, and Microelectronics of Montpellier (LIRMM), within Pr. Stefano A. Cerrì's group. I was a member of the Kayou team concerned with topics such as multi-agent systems, constraints, learning, Web, Grid, service oriented architecture, ontologies, collaborative learning.

RESEARCH PROJECTS

- National Center for Biomedical Ontology (NCBO) – Part of the National Centers for

*Ministère de l'Éducation Nationale, de la Recherche et de la Technologie.

† The lab was previously called Stanford Medical Informatics

Biomedical Computing supported by the NIH Roadmap.

- European Learning Grid Infrastructure (ELeGI) – Integrated Project EU - FP6
- Learning Grid of Excellence Working Group (LeGE-WG) – STREP EU - FP6

RESEARCH TOPICS

- *Topics of interest:* Semantic annotation, Ontologies, Semantic Web, Data integration, Text mining, Information Retrieval, Biomedical Informatics, Semantic distance & similarity, Service-oriented computing, Distributed systems, Multi-Agents Systems (MAS), Web, Grid, Functional and applicative programming languages, E-learning, Distant collaboration, Collaborative construction of ontologies.
- *NCBO project & postdoctoral research:* Within NCBO I work on **semantic annotation of biomedical data with biomedical ontologies**. I conceptualize, develop and experiment 2 applications: (i) a biomedical annotator web service that can be used by the life sciences community to tag their data automatically with ontology concepts; (ii) a database of biomedical resources annotated and indexed with biomedical ontologies concepts which can be used to search and integrate data. The annotation workflow I design is based on syntactic concept recognition (using concept names and synonyms) and on a set of semantic expansion algorithms that leverage the semantics in ontologies (e.g., *is_a* relations, mappings). Ontologies & terminologies used come from the 2 major sources: Unified Medical Language System (UMLS) and the NCBO BioPortal.
- *Doctoral research:* Situated at the **crossing of 3 important domains:** Service-Oriented Computing (Web service, components, business process, etc.), MAS (modelling, interaction, architecture) and GRID (resources sharing, Grid service, Grid computing). I propose in my thesis a new vision, called **dynamic service generation**, of the concept of service, based on agent (human or artificial) conversations through Grid infrastructure. Two important contributions are: (i) Strobe: an agent communication and representation model based on conversation contexts to enable interactive specification of agent capabilities; (2) Agent-Grid Integration Language (AGIL): a GRID-MAS integrated model formalized with a description language (and an ontology) which leverages the stateful and dynamic aspect of Grid services.
- *ELeGI project research:* Within ELeGI I worked on a collaborative environment constructed over a Grid infrastructure based shared desktops. We experiment the environment with a community of chemists tackling the problem of **collaborative construction of an ontology**.

SOFTWARE DEVELOPEMENT & TECHNOLOGY TRANSFER

- *STROBE model*, prototype implementation of the multiagent model designed during my PhD project (main developer)
- Open Biomedical Annotator & Resources web services – <http://obs.bioontology.org/> (design, development & evaluation of prototypes, supervising production releases).
- BioPortal, A web repository for biomedical ontologies developed by NCBO – <http://bioportal.bioontology.org/> (contribution)

MISCELLANEOUS

- *Collaborations:* **[present:]** (1) BMIR other research group e.g., Protégé group; (2) Kayou team and Pr. Stefano Cerri's group at LIRMM; (3) Pr. Alain Krief's group Notre Dame de la Paix University, Namur, Belgium. **[past:]** (4) As a member of the French MFI working group (Formal Model of Interaction). (5) Within the Integrated Project EU - FP6 ELeGI. (6) With other labs e.g., KMI, Open University, UK and SMI, Stanford University, USA
- *Publications:* 6 national (French) publications (4 conferences et 2 dissertations) and 12 international ones (4 journals, 3 conferences, 1 series, 5 workshops).

- Experience in EU projects (deliverables, proposals, team work, infoday) and NIH projects.
- Several seminars (national and international).

SPECIAL COMPUTING SKILLS & TEACHING ACTIVITIES

SPECIAL SKILLS

- Programming languages : functional/applicative (Lisp, Scheme) or object-oriented (Java) or imperative (Maple)
- Web services SOAP/WSDL (Axis) & REST (RestLet)
- Biomedical terminologies and ontologies (SNOMEDCT, Mesh, UMLS, OBO)
- Database systems (SQL), good experience with MySQL/JDBC and information system modelling language (UML, BPMN)
- Web languages (XML, HTML, Javascript, PHP/MySQL) and wikis
- Distant learning / e-learning platforms e.g., WebCT
- MadKit multi-agent platform (developed within the Kayou team at LIRMM)

TEACHING ACTIVITY

- **4 years of various academic teaching** (~400h) to different kind of students
- Preparation of lectures/tutorials/practical work, evaluation tasks (exam sheets, corrections, jury), projects and internships management, administrative responsibilities.
- *Given courses:* Structure and Interpretation of Computer Programs, introduction to algorithmic and programming with Scheme/Maple, French Informatics and Internet Certificate (Open/MS Office, e-learning platforms, etc.), Internet languages (HTML, Java/Javascript, PHP, etc.)
- *Internship supervision:* technical BSc. (maths and CS), MSc students in CS.

COLLECTIVE RESPONSABILITIES & ACTIVITIES

- Program committee for EDTLS 2009 workshop, GCMAS journal (new), SOCASE 2009 workshop.
- Participation to EU projects proposal writing and submission within the FP6 and FP7.
- Participation to the organization of local workshops (OTM 2006 & ALCAA 2004)
- Elected representative of CS PhD students at LIRMM (2004-2005). Interesting activity to understand the organization and operation of a research lab.
- Articles reviewing (ITS 2008, ALCAA 2004, etc.)

PERSONAL TOPICS

- Experiences in several associations (student, sportive, social ones).
- Music, travelling (several trips in Europe, North/South America and Asia.), reading (novel and press).
- Rock climbing (indoor and outdoor) and other outdoor sports (mountaineering, ice-climbing, hiking, etc.).

LANGUAGES

- French: Mother tongue
- English: Very good (school & working knowledge), 2 years in USA.
- Spanish: A few skills (learnt at school)
- Strong international orientation of work (publications & thesis manuscript written in English, international PhD defence jury, international postdoc)

REFERENCES

References & recommendation letters available upon request

CLEMENT JONQUET'S PUBLICATIONS

LIST OF PUBLICATIONS

JOURNAL

- Nigam H. Shah, Clement Jonquet, Annie P. Chiang, Atul J. Butte, Rong Chen, Mark A. Musen, **Ontology-driven Indexing of Public Datasets for Translational Bioinformatics**, *BMC Bioinformatics*, Vol. 10, February 2009.
- Clement Jonquet, Pascal Dugenie, Stefano A. Cerri, **Agent Grid Integration Language**, *Multiagent and Grid Systems*, Vol. 4 (2), pp. 167-211, 2008.
- Pascal Dugénie, Philippe Lemoisson, Clement Jonquet, Monica Crubézy, Claude Laurengo, **The Grid Shared Desktop: A Bootstrapping Environment for Collaboration**, *Advanced Technology for Learning, Special issue on Collaborative Learning*, Vol. 3 (4), pp. 241-249, 2006.
- Clement Jonquet, Stefano A. Cerri, **The STROBE model: Dynamic Service Generation on the Grid**, *Applied Artificial Intelligence Journal Special issue on Learning Grid Services*, Vol. 19 (9-10), p.967-1013, November 2005.

SERIE

- Clement Jonquet, Marc Eisenstadt and Stefano A. Cerri, **Learning Agents and Enhanced Presence for Generation of Services on the Grid**, In P. Ritrovato, C. Allison, S.A. Cerri, T. Dimitrakos, M. Gaeta and S. Salerno (eds): *Towards the Learning GRID: advances in Human Learning Services*, Vol. 127, Frontiers in Artificial Intelligence and Applications, p.203-213, IOS Press, November 2005.

INTERNATIONAL CONFERENCE

- Clement Jonquet, Nigam H. Shah, Mark A. Musen, **The Open Biomedical Annotator**, *AMLA Summit on Translational Bioinformatics*, March 2009, San Francisco, CA, USA.
- Clement Jonquet, Mark A. Musen and Nigam H. Shah, **A System for Ontology-Based Annotation of Biomedical Data**, In A. Bairoch, S. Cohen-Boulakia and C. Froidevaux (eds): *International Workshop on Data Integration in The Life Sciences 2008, DILS'08*, Vol. 5109, Lecture Notes in Bioinformatics, p.144-152, Springer-Verlag, June 2008, Evry, France.
- Stefano A. Cerri, Monica Crubézy, Pascal Dugénie, Clement Jonquet, Phillippe Lemoisson, **The Grid Shared Desktop for CSCL**. P. Cunningham and M. Cunningham (eds), *Exploiting the Knowledge Economy: Issues, Applications, Case Studies*, Vol. 3, Information and Communication Technologies and the Knowledge Economy, p. 1493-1499, IOS Press, Amsterdam, Netherlands, 2006. Proceedings of eChallenges 2006 Conference, October 2006, Barcelona, Spain.
- Clement Jonquet, Stefano A. Cerri, **I-Dialogue: Modelling Agent Conversation by Streams and Lazy Evaluation**, *International Lisp Conference, ILC'05*, Stanford University, CA, USA, June 2005.

WORKSHOPS

- Pascal Dugenie, Clement Jonquet, Stefano A. Cerri, **The Principle of Immanence in GRID-Multiagent Integrated System**, R. Meersman, Z. Tari, P. Herrero (eds.) *4th International Workshop On Agents and Web Services Merging in Distributed Environments, AWeSOMe'08*, , OTM 2008 Workshops, Vol. 5333, Lecture Notes in Computer Science, pp. 98-107, Springer-Verlag, Monterrey, Mexico, November 2008.
- Clement Jonquet, Pascal Dugenie, Stefano A. Cerri, **Service-Based Integration of Grid**

and Multi-Agent Systems Models, *International Workshop on Service-Oriented Computing: Agents, Semantics, and Engineering, SOCASE'08*, Vol. 5006, Lecture Notes in Computer Science, pp. 56-68, Springer-Verlag, Estoril, Portugal, May 2008.

- Frédéric Duvert, Clement Jonquet, Pascal Dugénie, Stefano A. Cerri, **Agent-Grid Integration Ontology**, R. Meersman, Z. Tari, P. Herrero (eds.) *International Workshop on Agents, Web Services and Ontologies Merging, AWeSOMe'06*, OTM Workshops 2006, Vol. 4277, Lecture Notes in Computer Science, pp. 136-146, Springer-Verlag, Montpellier, France, November 2006.
- Clement Jonquet, Stefano A. Cerri, **Agents Communicating for Dynamic Service Generation**, *1st International Workshop on GRID Learning Services, GLS'04*, p. 39-53, Maceió, Brazil, September 2004.
- Stefano A. Cerri, Marc Eisenstadt, Clement Jonquet, **Dynamic Learning Agents and Enhanced Presence on the Grid**, *3rd International LeGE-WG Workshop: GRID Infrastructure to Support Future Technology Enhanced Learning*, Berlin, Germany, December 2003, Electronic Workshops in Computing (eWiC).

NATIONAL (FRENCH) CONFERENCE

- Clement Jonquet, Nigam H. Shah, Mark A. Musen, **Un service Web pour l'annotation sémantique de données biomédicales avec des ontologies**, *13èmes Journées Francophones d'Informatique Médicale, JFIM'09*, Nice, France, Avril 2009.
- Clement Jonquet, Pascal Dugénie, Stefano A. Cerri, **Intégration orientée service des modèles Grid et multi-agents**, V. Chevrier and M-P. Huget (eds.), *14èmes Journées Francophones sur les Systèmes Multi-Agents, JFSMA06*, p. 271-274, Annecy, France, October 2006, Hermès.
- Clement Jonquet, Stefano A. Cerri, **Les Agents comme des interpréteurs Scheme : Spécification dynamique par la communication**, *14ème Congrès Francophone AFRIF-AFLA de Reconnaissance des Formes et Intelligence Artificielle, RFLA'04*, Vol. 2, p. 779-788, Toulouse, France, January 2004.
- Clement Jonquet, Stefano A. Cerri, **Apprentissage issu de la communication pour des agents cognitifs**, J-P. Briot, K. Ghédira (eds.) *11ème Journées Francophones sur les Systèmes Multi-Agents, JFSMA'03*, p. 83-87, Hammamet, Tunisia, November 2003, Hermès.
- Clement Jonquet, Stefano A. Cerri, **Cognitive Agents Learning by Communicating**, P. Anioré (ed.), *7ème Colloque Agents Logiciels, Coopération, Apprentissage & Activité humaine, ALCAA'03*, Bayonne, France, September 2003.

THESIS

- Clement Jonquet, **Dynamic Service Generation: Agent interactions for service exchange on the Grid**, *PhD thesis (thèse de doctorat)*, Université Montpellier 2, Montpellier, France, November 2006.
- Clement Jonquet, **Communication Agent et Interprétation Scheme pour l'apprentissage au méta-niveau**, *MSc thesis (mémoire de DEA)*, Université Montpellier 2, Montpellier, France, June 2003.

RESEARCH REPORT & MISC.

- Clement Jonquet, Mark A. Musen, Nigam H. Shah, **Help will be provided for this task: Ontology-Based Annotator Web Service**, Research Report BMIR-2008-1317, BMIR, Stanford University, USA, May 2008.
- Nigam H. Shah, Clement Jonquet, Mark A. Musen, **Ontrez project report**, Research Report BMIR-2007-1289, BMIR, Stanford University, USA, November 2007.
- Clement Jonquet, Pascal Dugénie, Stefano A. Cerri, **Intégration orientée service des modèles Grid et multi-agents**, *Rapport de Recherche, RR06036*, LIRMM, CNRS &

Université Montpellier 2, Montpellier, France, June 2006.

- Clement Jonquet, Pascal Dugenie, Stefano A. Cerri, **Service based integration of Grid and Multi-Agent Systems models**, *Rapport de Recherche, RR06012*, LIRMM, CNRS & Université Montpellier 2, Montpellier, France, February 2006.
- Clement Jonquet, Stefano A. Cerri, **Characterization of the Dynamic Service Generation Concept**, *Rapport de Recherche, RR06007*, LIRMM, CNRS & Université Montpellier 2, Montpellier, France, February 2006.
- Clement Jonquet, **A framework and ontology for Semantic Grid Services: An integrated view of WSMF and WSRF**, *Unpublished draft research report*, LIRMM, CNRS & Université Montpellier 2, Montpellier, France and KMi, Open University, Milton Keynes, UK, May 2005.

POSTER & DEMONSTRATION

- Mark A. Musen, Nigam H. Shah, Natasha F. Noy, Benjamin Dai, Michael Dorf, Nicholas B. Griffith, James Buntrock, Clement Jonquet, Michael Montegut, Daniel L. Rubin, **BioPortal: Ontologies and Data Resources with the Click of a Mouse**, AMIA 2008 Annual Symposium, Demonstrations, p.1223-1224, Washington DC, USA, November 2008
- Natasha F. Noy, Nigam H. Shah, Benjamin Dai, Michael Dorf, Nicholas B. Griffith, Clement Jonquet, Michael Montegut, Daniel L. Rubin, Cherie H. Youn, Mark A. Musen, **BioPortal: A Web Repository for Biomedical Ontologies and Data Resources**, Poster & Demonstration Session at the 7th International Semantic Web Conference, ISWC'08, Karlsruhe, Germany, November 2008
- Clement Jonquet, Nigam H. Shah, Mark A. Musen, **Using Biomedical Ontologies for Annotations of Biomedical Data**, *National Centers for Biomedical Computing All Hands Meeting*, August 2008.
- Mark A. Musen, Daniel L. Rubin, Nigam H. Shah, Clement Jonquet, Benjamin Dai, Michael Montegut, Ida Sim, Christopher G. Chute, Margaret-Anne Storey, Barry Smith, **The National Center for Biomedical Ontology**, *National Centers for Biomedical Computing All Hands Meeting*, August 2008.