Julien MAUPETIT

PhD in Structural Bioinformatics - Software / Web Developer

Personal Data

Place and Date of Birth:	Saint Denis (93), France	14 October 1980
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Education

Nov 2007   PhD's Degree in Bioinformatics, **Paris Diderot University**, Paris, France
Supervisor: Dr P. Tufféry

July 2004   Master's Degree in Bioinformatics, **Paris Diderot University**, Paris, France
Grade: *magna cum laude*

July 2002   Bachelor's Degree in Biochemistry, **Paris Diderot University**, Paris, France
Grade: *magna cum laude*

Principal Positions Held

Current
Sep 2008

Permanent Position
Research Engineer at Paris Diderot University
(RPBS & INSERM UMR-S973), Paris, France
Structural bioinformatics - Web development - System administration
Supervisors: Dr P. Tufféry and Dr B. Villoutreix

Since I obtained my position, my principal activities have been: (i) structural bioinformatics and chemoinformatics web servers / programs development, (ii) structural bioinformatics assistance with biological wet laboratories, and (iii) platform / laboratory hosting / computing / storage resources administration.

Aug 2008
Oct 2007

Assistant Professor at IBPC (CNRS UPR9080), Paris, France
Bioinformatics teaching - Peptide structure prediction
Supervisor: Pr P. Derreumaux

The technics developped during my PhD applied to peptide structures appears strongly relevant. Hence, we designed PEP-FOLD, a fast method for large scale *de novo* peptide and miniprotein structure prediction.

Sep 2007
Oct 2004

PhD at Paris Diderot University (INSERM U726), Paris, France
Protein structure prediction
Supervisor: Dr P. Tufféry

In a post-genomic context, plenty of proteins, identified by their sequence, have no experimentaly resolved structure, and fall out the range of application of comparative modelling methods. The goal of my PhD was to explore a new *de novo* protein structure prediction approach.

SUMMER 2003	Summer Intern at PARIS DIDEROT UNIVERSITY (INSERM U726) and PASTEUR INSTITUTE, Paris, France *Molecular visualization* Supervisor: DR P. TUFFÉRY Development and integration of a PDB files parser in a molecular visualization widget.
MAY 2003 JAN 2003	Intern at PARIS DIDEROT UNIVERSITY (EA3508), Paris, France *Molecular biology* Supervisor: PR J. LONDON Transgenic mice genotyping.
SUMMER 2002	Summer Intern at HOSPITAL BICHAT (INSERM U409), Paris, France *Molecular biology* Supervisor: DR M.E. MARTIN Hepcidin involvement in particular hemochromatosis – IRE/IRP system in transgenic mice over-expressing the superoxyde dismutase.

TEACHING EXPERIENCE

2005-2010, PARIS DIDEROT UNIVERSITY (250h)

MASTER	Introduction to XHTML/CSS Protein structure prediction Introduction to LaTeX Microarray data analysis Introduction to BioPython Molecular phylogeny Python programing Bioinformatics tools C programing Interfacing C and Python with Swig
BACHELOR	Bioinformatics tools

2006, 1st MEDILS SUMMER SCHOOL, SPLIT, CROATIA (4h)

PHD	Comparative protein modelling Normal modes analysis

PUBLICATIONS

Peer reviewed articles

[1] J. Maupetit, R. Gautier, and P. Tufféry. "SABBAC: online Structural Alphabet-based protein Back-Bone reconstruction from Alpha-Carbon trace". In: *Nucleic Acids Res* 34.Web Server issue (2006), W147–51. DOI: 10.1093/nar/gkl289.

[2] J. Maupetit, P. Tufféry, and P. Derreumaux. "A coarse-grained protein force field for folding and structure prediction". In: *Proteins* 69.2 (2007), pp. 394–408. DOI: 10.1002/prot.21505.

[3] L. Regad, F. Guyon, J. Maupetit, P. Tufféry, and A. C. Camproux. "A Hidden Markov Model applied to the protein 3D structure analysis". In: *Computational Statistics and Data Analysis* 52.6 (2008), pp. 3198–3207. DOI: 10.1016/j.csda.2007.09.010.

[4] J. Maupetit, P. Derreumaux, and P. Tufféry. "PEP-FOLD: an online resource for de novo peptide structure prediction". In: *Nucleic Acids Res* 37.Web Server issue (2009), W498–503. DOI: 10.1093/nar/gkp323.

[5] B. Néron, H. Ménager, C. Maufrais, N. Joly, J. Maupetit, S. Letort, S. Carrere, P. Tufféry, and C. Letondal. "Mobyle: a new full web bioinformatics framework". In: *Bioinformatics* 25.22 (2009), pp. 3005–11. DOI: 10.1093/bioinformatics/btp493.

[6] J. Maupetit, P. Derreumaux, and P. Tufféry. "A fast method for large-scale de novo peptide and miniprotein structure prediction". In: *J Comput Chem* 31.4 (2010), pp. 726–38. DOI: 10.1002/jcc.21365.

[7] J. Maupetit, A. Saladin, and P. Tufféry. "Prédiction en ligne de la structure des protéines : un état des lieux". In: *Spectra Analyse* 39.276 (2010), pp. 27–33.

[8] P. Schmidtke, V. Le Guilloux, J. Maupetit, and P. Tufféry. "fpocket: online tools for protein ensemble pocket detection and tracking". In: *Nucleic Acids Res* 38 Suppl (2010), W582–9. DOI: 10.1093/nar/gkq383.

[9] D. Lagorce, J. Maupetit, J. Baell, O. Sperandio, P. Tufféry, M. A. Miteva, H. Galons, and B. O. Villoutreix. "The FAF-Drugs2 server: a multi-step engine to prepare electronic chemical compound collections". In: *Bioinformatics* [Accepted] (2011).

[10] L. Regad, A. Saladin, J. Maupetit, C. Geneix, and A. C. Camproux. "SA-Mot : a web server for the identification of motifs of interest extracted from protein loops". In: *Nucleic Acids Res* [Accepted] (2011).

[11] Y. Shen, J. Maupetit, P. Derreumaux, and P. Tufféry. "Miniprotein fast fold de novo generation using biased profile conformational search". In: - [In preparation] (2011).

Proceedings

[12] H. Ménager, V. Gopalan, B. Néron, S. Larroudé, J. Maupetit, A. Saladin, P. Tufféry, Y. Huyen, and B. Caudron. "Bioinformatics applications discovery and composition with the Mobyle suite and MobyleNet". In: *RED 2010*. Vol. [Accepted]. Lecture Notes in Computer Science. 2011.

[13] Y. Shen, J. Maupetit, P. Derreumaux, and P. Tufféry. "PEP-FOLD: biased approach for the de novo prediction of peptide and miniprotein structure". In: *JOBIM 2011*. 2011. URL: http://www.pasteur.fr/ip/easysite/pasteur/fr/recherche/communication-scientifique/conferences-et-congres-scientifiques/conferences-service-colloques-institut-pasteur/jobim-2011.

[14] E. Strauser, M. Naveau, H. Ménager, J. Maupetit, Z. Lacroix, and P. Tufféry. "Semantic Map for Structural Bioinformatics: enhanced service discovery based on high level concept ontology". In: *RED 2010*. Vol. [Accepted]. Lecture Notes in Computer Science. Springer, 2011.

Oral communications

[15] J. Maupetit, F. Guyon, A. C. Camproux, P. Derreumaux, and P. Tufféry. *Candidate Fragments Prediction and their Assembly with a Greedy Algorithm and a Coarse-Grained Force Field to solve Protein Folding*. JOBIM. 2007. URL: http://crfb.univ-mrs.fr/jobim2007.

[16] J. Maupetit, B. Néron, H. Ménager, C. Maufrais, N. Joly, C. Letondal, and P. Tufféry. *Mobyle @ RPBS - A web portal for structural bioinformatics and chemoinformatics*. BIOGRALE. 2008. URL: http://pbil.univ-lyon1.fr/pf_bioinfo/breve86.html.

[17] J. Maupetit and P. Tufféry. *Mobyle vers Playmoby - Déploiement de web services*. BioWorkflow. 2008. URL: http://migale.jouy.inra.fr/bioworkflow/.

[18]   J. Maupetit and P. Tufféry. *Mobyle @ RPBS // MobyleNet.* MobyleNet. 2009. URL: http://mobylenet.rpbs.univ-paris-diderot.fr.

[19]   J. Maupetit, A. Saladin, and P. Tufféry. *La plate-forme RPBS : analyse fonctionnelle des structures protéiques in silico.* APLIBIO day. 2011. URL: http://renabi.genouest.org/platforms/aplibio/.

[20]   J. Maupetit, A. Saladin, and P. Tufféry. *The RPBS Platform - in silico functional analysis & prediction of protein structures ... and molecular 3D printing!* GGMM. 2011. URL: http://ggmm2011.wordpress.com.

Posters

[21]   J. Maupetit, P. Derreumaux, and P. Tufféry. *A Greedy Algorithm for Protein Structure Reconstruction: Improvements and Applications.* GCB. 2006. URL: http://www.gcb2006.de/.

[22]   J. Maupetit, F. Guyon, J. Martin, A. C. Camproux, P. Derreumaux, and P. Tufféry. *Assessing a New Approach for Protein Structure Modeling Combining Structural Alphabet Local Conformation Prediction and Greedy Algorithm for Reconstruction.* CASP7. 2006. URL: http://predictioncenter.org/casp7/.

[23]   S. Larroudé, J. Maupetit, H. Ménager, B. Néron, A. Saladin, B. Caudron, and P. Tufféry. *MobyleNet: user-centered large spectrum service integration over distributed sites.* ISMB. 2010. URL: http://www.iscb.org/ismb2010.

[24]   J. Maupetit, B. O. Villoutreix, and P. Tufféry. *3D Printing service @ RPBS.* JOBIM 2010. 2010. URL: http://www.jobim2010.fr.

[25]   J. Maupetit, B. O. Villoutreix, and P. Tufféry. *3D Printing service @ RPBS.* Obernai 2010. 2010. URL: http://infochim.u-strasbg.fr/new/spip.php?rubrique15.

[26]   D. Lagorce, J. Maupetit, J. Baell, O. Sperandio, P. Tufféry, M. A. Miteva, H. Galons, and B. O. Villoutreix. *The FAF-Drugs2 server: a multi-step engine to prepare electronic chemical compound collections.* BABE. 2011. URL: http://www.omicsonline.org/BABE2011/.

[27]   A. Saladin, J. Maupetit, H. Ménager, B. Néron, B. Caudron, and P. Tufféry. *MobyleNet: a network of trusted platforms for seamlessly sharing a large spectrum of services.* GGMM. 2011. URL: http://ggmm2011.wordpress.com.

[28]   Y. Shen, J. Maupetit, P. Derreumaux, and P. Tufféry. *Mini protein fast fold de novo generation using biased conformation search.* PepCon. 2011. URL: http://www.bitlifesciences.com/PepCon2011/.

[29]   Y. Shen, J. Maupetit, P. Derreumaux, and P. Tufféry. *PEP-FOLD: biased approach for the de novo prediction of peptide and miniprotein structure.* GGMM. 2011. URL: http://ggmm2011.wordpress.com.

Intern supervision

2010 5 months	**SBMap, Structural Bioinformatics Semantic Map** *E. Strauser, Master of Bioinformatics* SBMap Java applet user interface and graphical navigation improvements. **PyPDB, a toolbox to work with PDB files** *F. Briand, Master of Bioinformatics* Design of a command line tool to manipulate PDB files, its packaging and integration in the RPBS Mobyle portal.
2009 3 months	**PyPDB, a python class to work with PDB files** *C. Habib, Bachelor in Bioinformatics* Python code cleanup and documentation, integration of PDB-XML files support.
2008 5 months	**SBMap, Structural Bioinformatics Semantic Map** *M. Naveau, Master of Bioinformatics* Structural bioinformatics concepts ontology automatic update integration in an web administration interface.

Computer Skills

Operating systems:	GNU/Linux (expert), MacOS X, Windows
Programming languages:	Python, Bash, C, R (statistics)
Web development:	XHTML, CSS, Javascript/AJAX, PHP, Python (Django, CGI)
Databases:	SQL (MySQL, SQLite)
Graphic Art:	ADOBE Photoshop, Illustrator

Interests and Activities

Web technologies, Python, Open-Source, Programming
Guitar playing, Actor in a theater company