

Pierre JANNIN

SITUATION

Nationality: French

Date of Birth: 26 April 1963

3 children

Administrative Position: INSERM Senior Researcher

Professional address : VisAGeS U746, INSERM-INRIA-CNRS, Faculté de Médecine, Université de Rennes 1, 2, Avenue du Pr Léon Bernard, CS34317, 35043 RENNES Cedex France, Tel:

(33) 2 23 23 45 88, Secr: (33) 2 23 23 47 18, Fx: (33) 2 99 84 71 71,

Web : <http://www.irisa.fr/visages/team/Pierre.Jannin-eng.html>,

E-mail : pierre.jannin@irisa.fr

RESEARCH INTERESTS:

- Image guided neurosurgery, Deep Brain Stimulation
- Augmented reality and virtuality
- Surgical process models
- Validation in medical image processing and computer assisted surgery
- Medical image fusion

EDUCATION

- *Habilitation*, University de Rennes 1, "From image guided neurosurgery towards an information and knowledge based neurosurgical process", 2005
- *Ph. D.*, University of Rennes I, Signal Analysis and Telecommunications, Thesis : "Modeling, display and analysis of 3D data using Octree in Medical Imaging", 1988
- *M. Sc.* in Automatics and Signal Analysis (option Pattern Recognition), Technological University of Compiègne (1985)
- *M Sc.* in Computer Science, University of Rennes I, 1984

SELECTED ACADEMIC & PROFESSIONAL APPOINTMENTS

1988–1996	Research Engineer	CERIUM	Rennes, France
1996-2004	Senior Researcher	UPRES 2232 and 3192	Rennes, France
2005-Today	INSERM Senior Researcher	Visages U746 INSERM/INRIA	Rennes, France
2009-2010	Visiting Professor	BIC Montreal Neurological Institute McGill University	Montréal, Canada

TEACHING ACTIVITIES

3D display in medical imaging, Data fusion in medical imaging, Validation in medical image processing, Image Guided Surgery, Surgical Process Modeling, Augmented reality and visualisation systems in surgery, Patient to Physical space Registration:

- MSc (DEA) Biomedical Engineering, University of Tours-Angers-Nantes-Rennes
- MSc of Biological Sciences in Medicine, University Rennes 1
- European School of Medical Physics, Archamps
- Initiator and manager of a MSc lectures unit on "Image Guided Surgery" and on "Basis in Medical image processing"

• **Original publications in peer-reviewed journals**

1. Laurent Riffaud, Thomas Neumuth, Xavier Morandi, Christos Trantakis, Jürgen Meixensberger, Oliver Burgert, Brivael Trelhu, Pierre **Jannin**, Recording of surgical processes: a study comparing senior and junior neurosurgeons during lumbar disc herniation surgery, *Neurosurgery*, 67(2):325-332.
2. Thomas Neumuth, Pierre **Jannin**, Juliane Schlomberg, Jürgen Meixensberger, Peter Wiedemann, Oliver Burgert, Analysis of surgical intervention populations using generic Surgical Process Models, *Int Journ. Comput. Assisted Radiol and Surg.* 2010.
3. Lalys F., Haegelen C., Ferre J.C., El-Ganaoui O., **Jannin P.**, Construction and assessment of a 3T MRI brain template, *Neuroimage*, 49(1):345-354.
4. Clement de Guibert, Camille Maumet, Jean-Christophe Ferre, Pierre **Jannin**, Arnaud Biraben, Catherine Allaire, Christian Barillot, Elisabeth Le Rumeur, fMRI language mapping in children: A panel of language tasks using visual and auditory stimulation without reading or metalinguistic requirements, *NeuroImage*, In Press, 2010.
5. Duhameau B., Ferre J. C., **Jannin P.**, Gauvrit J. Y., Verin M., Millet B., Drapier D., Chronic and treatment-resistant depression: A study using arterial spin labeling perfusion MRI at 3Tesla, *Psychiatry Res*, 2010.
6. Grunert R., Korb W., **Jannin P.**, Dengl M., Mockel H., Neumuth T., Strauss G., Trantakis C., and Meixensberger, J., Systematic user-based assessment of Navigated Control Spine, *Biomedizinische Technik. Biomedical engineering Biomed Tech (Berl)*. 55(6):351-359
7. Paul P., Morandi X., **Jannin P.**, A Surface Registration Method for Quantification of Intraoperative Brain Deformations in Image-Guided Neurosurgery, *IEEE Trans on Information Technology in BioMedicine*, 2009, 13(6):976-983.
8. Morineau T., Morandi X., Le Moellic N., Diabira S., Riffaud L., Haegelen C., Henaux PL., **Jannin P.**, Decision Making During Preoperative Surgical Planning, *Human Factors: The Journal of the Human Factors and Ergonomics Society*, 2009; 51: 67-77.
9. Neumuth T., **Jannin P.**, Strauss G., Meixensberger, Burgert O. Validation of Knowledge Acquisition for Surgical Process Models, *Journal of the American Medical Informatics Association*, 2009 Jan-Feb;16(1):72-80.
10. Duchesne S., **Jannin P.** Proposing a manuscript peer-review checklist, *NeuroImage*, 2008, 39(4):1783-7.
11. **Jannin P.**, Morandi X. Surgical models for computer-assisted neurosurgery, *NeuroImage* 2007, 3(37):783-791.
12. **Jannin P.**, Grova C., Maurer C.. Model for designing and reporting reference based validation procedures in medical image processing. *Int Journ. Comput. Assisted Radiol and Surg.* 2006 1(2):1001-115
13. Haegelen C, Verin M, Broche BA, Prigent F, **Jannin P**, Gibaud B, Morandi X. Does subthalamic nucleus stimulation affect the frontal limbic areas? A single-photon emission computed tomography study using a manual anatomical segmentation method. *Surg Radiol Anat.* 2005 Sep 14;:1-6
14. Paul P, Fleig O and **Jannin P**. Augmented Virtuality based on Stereoscopic Reconstruction in Multimodal Image-Guided Neurosurgery: Methods and Performance Evaluation, *IEEE Transactions on Medical Imaging*, July 2005, 24(11), pp 1500-1511.
15. Aubert-Broche B, **Jannin P**, Biraben A, Bernard AM, Haegelen C, Prigent-Lejeune F, and Gibaud B. Evaluation of intra-scan intra-subject interhemispheric asymmetry detection methods in brain SPECT - application in epilepsy. *Journal of Nuclear Medicine*, 2005 Apr;46(4):707-713.
16. Grova C, **Jannin P**, Buvat I, Benali H, Bansard JH, Biraben A, and Gibaud B. From anatomic standardization analysis of perfusion SPECT data to perfusion pattern modelling: evidence of functional networks in healthy subjects and temporal lobe epilepsy patients. *Academic Radiology*, 2005 May;12(5):554-65.
17. Grova C, **Jannin P**, Biraben A, Buvat I, Benali H, Bernard AM, Scarabin JM and Gibaud B. A methodology for generating normal and pathological brain perfusion spect images for evaluation of mri/spect fusion methods: application in epilepsy. *Phys. Med. Biol.*, 2003;48(24):4023-4043.
18. **Jannin P**, Raimbault M, Morandi X, Riffaud L and Gibaud B. Modeling Surgical Procedures for Multimodal Image-Guided Neurosurgery, *Journal of Computer Aided Surgery*, 2003;8(2):98-106.
19. Aubert-Broche B, Grova C, **Jannin P**, Buvat I, Benali H and Gibaud B. Detection of inter-hemispheric asymmetries of brain perfusion in SPECT, *Phys. Med. Biol.*, 2003;48(11):1505-1517.
20. Toulouse P, Agulhon C, Taussig D, Napuri S, Biraben A, **Jannin P**, Carsin M and Scarabin JM. Magnetoencephalographic studies of two cases of diffuse subcortical laminar heterotopia or so-called double cortex, *Neuroimage*, 2003;19(4):1251-9.
21. **Jannin P**, Morandi X, Fleig OJ, Le Rumeur E, Toulouse P, Gibaud B and Scarabin JM. Integration of sulcal and functional information for multimodal neuronavigation, *Journal of Neurosurgery*, 2002;96:713-723.
22. **Jannin P**, Seigneuret E, Morandi X, Fleig OJ, Riffaud L, Le Goualher G, Brassier G and Scarabin JM. Guidage sulcal en neuro-navigation dans la chirurgie des cavernomes supratentoriels, *Neurochirurgie*, 2001;46(6):534-540.
23. **Jannin P**, Grova C and Gibaud B. Fusion de données en imagerie médicale: une revue méthodologique basée sur le contexte clinique“, *ITBM-RBM Innovation et technologie en biologie et médecine*, 2001 ;22(4) :196-215.

24. **Jannin P**, Fleig OJ, Seigneuret E, Grova C, Morandi X and Scarabin JM. A Data Fusion Environment for Multimodal and Multi-Informational Neuro-Navigation, *Journal of Computer Aided Surgery*, 2000;5(1):11-17.
25. Le Rumeur E, Allard M, Poiseau E and **Jannin P**. Role of the fMRI sensory stimulation type for the understanding of normal and lesional cortex connections for presurgical brain mapping, *Journal of Neurosurgery*, 2000;93:427-431.
26. **Jannin P**, *et al.* A Ray traced Texture Mapping for Enhanced Virtuality in Image Guided NeuroSurgery. Health Care in the Information Age : Future Tools for Transforming Medicine, Study in Health Technology and Informatics, Vol. 29, IOS Press, Amsterdam, Janv 1996, pp 553-563.
27. **Jannin P**, Prévost G, Le Noach R and Coatrieux JL. Conception d'architectures spécialisées pour des stations de travail interactives à base d'octrees en imagerie médicale, *Revue Innovation Technologique en Biologie et Médecine*, 1991;12(2):223-232.

· **Editorials in international peer reviewed journals**

28. **Jannin P**, Krupinski E, Warfield S. Validation in medical image processing. *IEEE Trans Med Imaging*. 2006 Nov;25(11):1405-9.
29. **Jannin P**, Cleary K, Joskowicz L. ISCAS at CARS 2006. *Comput Aided Surg*. 2006 May;11(3):107-8
30. **Jannin P**, Fitzpatrick JM, Hawkes DJ, Pennec X, Shahidi R and Vannier MW. Editorial: Validation of Medical Image Processing in Image-Guided Therapy, *IEEE Transactions on Medical Imaging*, 2002;21(11):1445-1449.

· **Book chapters**

31. Bidaut L., **Jannin P.**, (2008) "Biomedical multimodality imaging for clinical and research applications: principles, techniques and validation" in Lemoigne Y and Caner A (Eds). "Molecular Imaging: Computer reconstruction and practice" Springer, Dordrecht (Netherlands), NATO Science for Peace and Security Series, p. 249-281
32. **Jannin P.**, Korb W.. (2008) "Assessment in Image Guided Interventions" in Peters TM and Cleary K (Eds). "Image-Guided Intervention Technology and Applications." Springer-Verlag Berlin Heidelberg.: 2008.
33. **Jannin P**, Grova C and Gibaud B. (2001) Medical applications of NDT data fusion, in Applications of NDT data fusion, Edited by Gros X.E., Kluwer academic publishers, p. 227-267

SCIENTIFIC ACTIVITIES

- General secretary of the International Society for Computer Aided Surgery (ISCAS)
- Associate member at the ICCAS institute in Leipzig (Germany)
- Area editor of International Journal for Computer Aided Radiology and Surgery (Springer)
- Co General Chair and co-founder of the first IPCAI international conference (Information Processing in Computer Assisted Interventions); proceedings in LNCS, Geneva July 2010
- Reviews for international journals: IEEE TMI, IEEE TITB, IEEE TBE, IEEE EMB, Medical Image Analysis, IEEE TNS, IRBM, Academic Radiology, Cellular and Molecular Biology, Computer Methods and Programs in Biomedicine, IMIA Medical Informatics Yearbook, IJCARS, CAS, and Neuroimage
- Reviewing for international conferences: MICCAI, CARS, SPIE, ACCV
- Congress Organizing Committee, Program committee and executive committee member of Computer Assisted Radiology and Surgery conference (CARS)
- Program committee member of SPIE Medical Imaging conference (Visualization, Image-Guided Procedures, and Display)
- Member of the committee for patents and technological transfer at the University of Rennes 1

