Pierre Jannin is a INSERM Research Director at the Medical School of the University of Rennes (France). He is the head of the MediCIS research group from both UMR 1099 LTSI, Inserm research institute and University of Rennes. He was awarded the PhD degree from the University of Rennes in 1988 on multimodal 3D imaging in neurosurgery and the "Habilitation" (HDR) from the University of Rennes in 2005 on information and knowledge assisted neurosurgery. He has more than 30 year experience in designing and developing computer assisted surgery systems. His research topics include surgical data science, surgical robotics, image-guided surgery, augmented and virtual reality, modeling of surgical procedures and processes, study of surgical expertize, surgical training and validation methodology in medical image processing. He authored or co authored more than 90 peer-reviewed international journal papers. He was the President of the International Society of Computer Aided Surgery (ISCAS) from 2014 to 2018 and the General Secretary from 2004 to 2014. He was board member of the MICCAI society from 2014 to 2018. He is an elected MICCAI Fellow since 2018. He is senior member of the SPIE society. He is Deputy Editor for the International Journal of Computer Assisted Radiology and Surgery. He is acted as associate editor and reviewer for several journals (e.g., IEEE TMI, MedIA, IJCARS, Neuroimage, Yearbook of Medical Informatics). He is member of several Organizing and Program Committees of international conferences, such as MICCAI, CARS, SPIE Medical Imaging, and MMVR. He was President of CARS 2019 conference and Program Co-Chair of MICCAI 2017. He is co-founder of IPCAI conferences and was Co-General Chair from 2010 to 2016.

Pierre JANNIN

SITUATION
Nationality: French
Date of Birth: 26 April 1963
3 children
Administrative Position: INSERM Research Director

Professional address : MediCiS, UMR 1099 / LTSI, INSERM, 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,
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E-mail : pierre.jannin@univ-rennes1.fr

RESEARCH INTERESTS:

- Computer assisted surgery
- Surgical Data Science
- AI: Machine and Deep Learning, Ontologies
- Augmented reality and virtuality
- Medical image processing
- Surgical skill simulation, training and evaluation
- Surgical process models
- Surgical robotics
- Validation in medical image processing and computer assisted surgery

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

2012-Today	INSERM Senior Researcher and Director	MediCIS UMR 1099 INSERM	Rennes, France
July 2019	Visiting Professor	University of Verona	Verona, Italy
April 2018	Visiting Professor	The University of Tokyo	Tokyo, Japan
July-August 2017	Visiting Professor	Robarts Research Institute, University of Western Ontario	London, Ontario, Canada
August 2015	Visiting Professor	SINTEF, Norwegian University of Science and Technology	Trondheim, Norway
May-August 2013	Visiting Professor	CAMIT, Kyushu University	Fukuoka, Japan
2005-2011	INSERM Senior Researcher	U746 INSERM	Rennes, France
2009-2010	Visiting Professor	BIC Montreal Neurological Institute McGill University	Montréal, Canada
2005-2010	Associate Member	ICCAS institute	Leipzig, Germany
1996-2004	Senior Researcher	UPRES 2232 and 3192	Rennes, France
1988–1996	Research Engineer	CERIUM	Rennes, France

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, Simulation for Surgical Training, Surgical Data Science:

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

SCIENTIFIC ACTIVITIES

- President of the International Society for Computer Aided Surgery (ISCAS) from 2014 to 2018 and General Secretary from 2004 to 2014
- Board member of the MICCAI Society from 2014 to 2018
- Area editor of International Journal for Computer Aided Radiology and Surgery (Springer)

- Co General Chair and co-founder of the IPCAI international conference (Information Processing in Computer Assisted Interventions); proceedings in LNCS, Geneva July 2010, Berlin 2011, Pisa (Italy) 2012, Heidelberg 2013, Fukuoka (Japan) 2014, Barcelona 2015
  - IPCAI is a highly selective international conference on computer aided interventions. The selection rate was below 33%, including posters. It consists of long papers with journal-like revision process and unlimited time for discussion during the conference.
- Reviews for international journals: including 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, MMVR, …
- Congress Organizing Committee, Program committee and executive committee member of Computer Assisted Radiology and Surgery conference (CARS)
- Program Co-Chair of MICCAI 2017 (Quebec City, Canada)
- President of the Annual Conferences of the International Society for Computer Aided Surgery from 2014 to 2018
- Co-chair of the 2013 MICCAI workshop and tutorial committee (Nagoya, Japan)
- Program committee member of SPIE Medical Imaging conference (Visualization, Image-Guided Procedures, and Display) from 2005, MICCAI conference from 2011, and Medicine Meets Virtual Reality (MMVR) conference from 2011.
- Member of the committee for patents and technological transfer at the University of Rennes 1 from 2002 to 2012

SELECTION OF THE 5 MOST REPRESENTATIVE PUBLICATIONS

- Lena Maier-Hein, Swaroop S. Vedula, Stefanie Speidel, Nassir Navab, Ron Kikinis, Adrian Park, Matthias Eisenmann, Hubertus Feussner, Germain Forestier, Stamatia Giannarou, Makoto Hashizume, Darko Katic, Hannes Kenngott, Michael Kranzfelder, Anand Malpani, Keno März, Thomas Neumuth, Nicolas Padoy, Carla Pugh, Nicolai Schoch, Danail Stoyanov, Russell Taylor, Martin Wagner, Gregory D. Hager and Pierre **Jannin** Surgical data science for next generation interventions NATURE BIOMEDICAL ENGINEERING, VOL 1, SEPTEMBER 2017, 691–696

- Germain Forestier, Florent Lalys; Louis Collins; Jurgen Meixensberger; Shafik Wassef; Thomas Neumuth; Benoit Goulet; Laurent Riffaud; Pierre **Jannin**, Multi-site study of surgical practice in neurosurgery based on Surgical Process Models, Journal of Biomedical Informatics, 2013, Oct; 46(5):822-9

- **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)2:1001-115

- 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, Special Issue on Intra-Operative Image Processing for Surgical Guidance, July 2005, 24(11), pp 1500-1511.

- **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.

AWARDS FROM SUPERVISED RESEARCHERS AND STUDENTS

- 2019: Award of the French Academy of Surgery for Innovation in Computer Aided Interventions. Clément Baumgarten: « AI in Functional Neurosurgery »
- 2016: Best paper award on clinical impact at the Information Processing in Computer Assisted Interventions international conference (IPCAI) Heidelberg, Germany June 2016 Olga Dergachyova

- 2016: Young scientist award from the "Image Guided Procedures, Robotic Interventions, and Modeling" conference at SPIE Medical Imaging conference in San Diego (USA), Feb 2016: Clément Baumgarten
- 2016: Third place award at M2CAI workshop at MICCAI 2016 in Athens for the challenge on surgical phase recognition on endoscopic videos, Sep 2016: Olga Dergachyova
- 2015: Best paper award at Artificial Intelligence in Medicine Europe conference (AIME) Avia, Italy June 2015 "Optimal sub-sequence matching for the automatic prediction of surgical tasks »: Germain Forestier
- 2014: Best paper award CARS 2014 international conference: D'Albis T, Haegelen C, Essert C, Fernández-Vidal S, Lalys F, **Jannin** P., PyDBS: an automated image processing workflow for deep brain stimulation surgery. *Int J Comput Assist Radiol Surg.* 2014 May 6. PMID: 24799270
- 2013: Best research project award at "Loading the future" Pole de compétitivité AcouStiC project

Teaching activities

From 2006	Manager of a lecture unit in M.Sc. 2 Signal and Images in Biology and Medecine on "Image Guided Surgery" One week per year : "Image-Patient registration: methods and validation" 3h, "Surgical process models" 3h, "Intraoperative visualization" 3h, « Simulation for Surgical training » 1h, « Surgical Data Science » 1h
From 2008	Manager of a lecture unit in M.Sc. Signal and Images in Biology and Medecine on "Basis on Image processing" 30 hours per year
2014	"Image guided neurosurgery and neuroimaging" for Excellence Courses at CominLabs (4h)
2006-2000	M.Sc. Signal and Images in Biology and Medecine « 3D Visualization in medical imaging » 2h per year
2006-2002	M.Sc. Signal and Images in Biology and Medecine « Validation in medical image processing » 2h per year
2008-2001	Professor at the European School of Medical Physics (Archamps, France) « Data fusion in medical imaging : Methods, applications and validation », 3h per year
2003-1999	M.Sc. Biological and Medical Science « 3D display and data fusion » 4 h per year
2002-1999	DES/DIS X Ray technology and radioprotection « 3D display», 2h. per year
2004-1994	School of Medical Electroradiology at Pontchaillou Hospital Rennes « Data fusion in medical imaging » 2h per year, « 3D display», 5 h per year

Ph D and M Sc Student Supervision

Ph D	• Current: T. Dognon (2018-2021), M. Peralta (2017-2020), Co supervision: M. Leloux (2018-2021), Gurvan Lecuyer (2016-2019), Marie-Stephanie Bracq (2016-2019) : Co supervision with CRPCC (Univ. Rennes 2) • Previous: P.L. Henaux (2015-2019), O. Dergachyova (2014-2017), F. Monge (2012-2016), A. Huaulme, (2013-2016): Co supervision with TIMC-IMAG (UJF Grenoble), F. Despinoy (2013-2015): Co supervision with LIRRM (Montpellier, France), D. Bouget (2012-2015), C. Haegelen (2009-2014), L. Riffaud (2009-2012), Lalys F. (2009-2012), Trelhu B. (2007-2011), Neumuth T. (2005-2009): Co supervision with Leipzig University (D), Grunert R. (2005-2008): Co supervision with Leipzig University (D), Paul P (2003-2006), Raimbault M (2001-2004), Broche B (2000-2004), Grova C (1999-2002), Fleig O (1999-2002)

M Sc	> 40 students from : M. Sc. STIR "Signal Processing and Telecommunications", M. Sc. SIBM " Signal and Images in Biology and Medicine ", M. Sc. "Statistics" Paris VII, M. Sc. « Computer Science », UT de Compiègne, Institut Supérieure d'Electronique de Paris, IFSIC de Rennes , ...
PhD defense	Gauthier Gras (ICL, London, UK) Jan 2019 (Rapporteur), Ninon Candalh-Touta (Sorbonne Université, Paris) October 2018 (Rapporteur), Hamza Waleed Ghandorh (University of Western Ontario, London, Canada) Feb 2018, Ketan Bacchuwar (ESIEE, Paris) May 2018, Hennadii Madan (University of Lubjana, Slovenia) July 2018 (Rapporteur), Pedro Patlan-Rosales (Inria, Rennes) January 2018, Zoheir Dib (LATIM, Université de Brest) September 2017 (Rapporteur), Mc Leod J. (University of Western Ontario, London, Canada) November 2017 (Rapporteur), Saeed Mahdizadeh Bakhshmand (University of Western Ontario, London, Canada) July 2017 (Rapporteur), Patrick Wucherer (TUM Munich, Germany) December 2016, Emran Mohammad Abu Anas (University of Briticsh Columbia, Canada) Novembre 2016 (Rapporteur), Roche B. (Université de Clermont Ferrand) Novembre 2016, Claude G. (INSA, IRISA, Inria, Rennes) July 2016, Dolz J. (INSERM, Lille) June 2017 (Rapporteur), Ferrante E. (Université Paris-Saclay, Centrale Supelec) Mai 2016, Bernhardt S. (IRCAD, Université de Strasbourg) Février 2016 (Rapporteur), Rafii-Tari H. (Imperial College of London) Decembre 2015 (Rapporteur), Charrière K. (Telecom Bretagne) Novembre 2015 (Rapporteur), Jaberzadeh A. (Université de Strasbourg) Février 2015 (Rapporteur) Daga P. (University College of London, Great Britain) Avril 2014, Shakir D. (Technische Universitat Munchen, Germany) Mars 2014, Banihachemi JJ. (Université de Grenoble) Octobre 2013, Sanches R. (Université de Montpellier) Aout 2013, Wolf R. (Université de Grenoble) Juin 2013, Caire F. (Université de Bordeaux) Décembre 2012, Bigdelou A. (Technische Universitat Munchen, Germany) November 2012, Zhang-Ge L. (Université d'Angers) November 2012, Malarme P. (Université Libre de Bruxelles) October 2011, Teodorescu R. (Université de Besançon) April 2011, Verscheure L. (Université de Lille) October 2010, Vigneron L. (Université Liège, Belgique) February 2009, Wannous (Université de Poitiers) December 2008, Traub J. (Technische Universitat Munchen, Germany) November 2008, Gorges S. (INRIA – Université de Nancy) May 2007, Voros S. (Université Pierre et Marie Curie) December 2006
Habilitation defense	Forestier G. (Université de Haute Alsace) November 2017, Malti A. (Université de Tiemcen, Algérie) September 2017 (Rapporteur), Vermandel M. (Université Lille 2) Septembre 2013, Essert C. (Université Louis Pasteur de Strasbourg) September 2011

Scientific societies

2014 - 2018	President of the International Society for Computer Aided Surgery (ISCAS)
2014 - 2018	Board member of the MICCAI Society
2004 - 2014	General secretary of the International Society for Computer Aided Surgery (ISCAS)
Memberships	ISCAS, MICCAI, IEEE, SSH, SPIE (senior member), CRITT Santé Bretagne

Publications

·   *Original publications in peer-reviewed journals*

•   *2020*

1.   Nakazawa A, Harada K, Mitsuishi M, Jannin P. Real-time surgical needle detection using region-based convolutional neural networks. Int J Comput Assist Radiol Surg. 2020 Jan;15(1):41-47.
2.   Derathé A, Reche F, Moreau-Gaudry A, Jannin P, Gibaud B, Voros S. Predicting the quality of surgical exposure using spatial and procedural features from laparoscopic videos. Int J Comput Assist Radiol Surg. 2020 Jan;15(1):59-67.

•   *2019*

3.   Le Lous M, Simon O, Lassel L, Lavoue V, Jannin P. Hybrid simulation for obstetrics training: A systematic review. Eur J Obstet Gynecol Reprod Biol. 2019 Dec 24;246:23-28
4.   Ahrweiller K, Houvenaghel JF, Riou A, Drapier S, Sauleau P, Haegelen C, Jannin P, Vérin M, Palard X, Le Jeune F. Postural instability and gait disorders after subthalamic nucleus deep brain stimulation in Parkinson's disease: a PET study. J Neurol. 2019 Nov;266(11):2764-2771
5.   Hénaux PL, Jannin P, Riffaud L. Nontechnical Skills in Neurosurgery: A Systematic Review of the Literature. World Neurosurg. 2019 Oct;130:e726-e736.
6.   Huaulmé A, Despinoy F, Perez SAH, Harada K, Mitsuishi M, Jannin P. Automatic annotation of surgical activities using virtual reality environments. Int J Comput Assist Radiol Surg. 2019 Oct;14(10):1663-1671
7.   Henaux, P.L., et al., Relationships Between Expertise, Crew Familiarity and Surgical Workflow Disruptions: An Observational Study. World J Surg, 2019. **43**(2): p. 431-438.
8.   Bracq MS, Michinov E, Arnaldi B, Caillaud B, Gibaud B, Gouranton V, Jannin P. Learning procedural skills with a virtual reality simulator: An acceptability study. Nurse Educ Today. 2019 Aug;79:153-160
9.   Kobayashi S, Cho B, Huaulmé A, Tatsugami K, Honda H, Jannin P, Hashizumea M, Eto M. Assessment of surgical skills by using surgical navigation in robot-assisted partial nephrectomy. Int J Comput Assist Radiol Surg. 2019 Aug;14(8):1449-1459
10.   Duprez J, Houvenaghel JF, Dondaine T, Péron J, Haegelen C, Drapier S, Modolo J, Jannin P, Vérin M, Sauleau P. Subthalamic nucleus local field potentials recordings reveal subtle effects of promised reward during conflict resolution in Parkinson's disease. Neuroimage. 2019 Aug 15;197:232-242
11.   Marie-Stéphanie Bracq; Estelle Michinov; Pierre **Jannin** Virtual Reality Simulation in Nontechnical Skills Training for Healthcare Professionals: A Systematic Review, Simulation in Healthcare: The Journal of the Society for Simulation in Healthcare. 14(3):188–194, JUN 2019

•   *2018*

12.   Holden, M.S., et al., Self-guided training for deep brain stimulation planning using objective assessment. Int J Comput Assist Radiol Surg, 2018.
13.   Maier-Hein L, Eisenmann M, Reinke A, Onogur S, Stankovic M, Scholz P, Arbel T, Bogunovic H, Bradley AP, Carass A, Feldmann C, Frangi AF, Full PM, van Ginneken B, Hanbury A, Honauer K, Kozubek M, Landman BA, März K, Maier O, Maier-Hein K, Menze BH, Müller H, Neher PF, Niessen W, Rajpoot N, Sharp GC, Sirinukunwattana K, Speidel S, Stock C, Stoyanov D, Taha AA, van der Sommen F, Wang CW, Weber MA, Zheng G, Jannin P, Kopp-Schneider A. Why rankings of biomedical image analysis competitions should be interpreted with care, *Nature Communications* **9**, Article number: 5217 (2018)
14.   Huaulme, A., et al., Sequential surgical signatures in micro-suturing task. Int J Comput Assist Radiol Surg, 2018.
15.   Haegelen, C., et al., Functional atlases for analysis of motor and neuropsychological outcomes after medial globus pallidus and subthalamic stimulation. PLoS One, 2018. **13**(7): p. e0200262.
16.   Gibaud, B., et al., Toward a standard ontology of surgical process models. Int J Comput Assist Radiol Surg, 2018
17.   Forestier, G., et al., Surgical motion analysis using discriminative interpretable patterns. Artif Intell Med, 2018.
18.   Forestier, G., et al., Surgical skills: Can learning curves be computed from recordings of surgical activities? Int J Comput Assist Radiol Surg, 2018.

19. Despinoy, F., et al., Evaluation of contactless human-machine interface for robotic surgical training. Int J Comput Assist Radiol Surg, 2018. **13**(1): p. 13-24.

20. Dergachyova, O., et al., Automatic preoperative planning of DBS electrode placement using anatomo-clinical atlases and volume of tissue activated. Int J Comput Assist Radiol Surg, 2018.

21. Dergachyova, O., X. Morandi, and P. Jannin, Knowledge transfer for surgical activity prediction. Int J Comput Assist Radiol Surg, 2018.

22. Baumgarten, C., et al., Data-Driven Prediction of the Therapeutic Window during Subthalamic Deep Brain Stimulation Surgery. Stereotact Funct Neurosurg, 2018. **96**(3): p. 142-150.

- *2017*

23. Lena Maier-Hein, Swaroop S. Vedula, Stefanie Speidel, Nassir Navab, Ron Kikinis, Adrian Park, Matthias Eisenmann, Hubertus Feussner, Germain Forestier, Stamatia Giannarou, Makoto Hashizume, Darko Katic, Hannes Kenngott, Michael Kranzfelder, Anand Malpani, Keno März, Thomas Neumuth, Nicolas Padoy, Carla Pugh, Nicolai Schoch, Danail Stoyanov, Russell Taylor, Martin Wagner, Gregory D. Hager and Pierre **Jannin** Surgical data science for next generation interventions NATURE BIOMEDICAL ENGINEERING, VOL 1, SEPTEMBER 2017, 691–696

24. G. Forestier, F. Petitjean, L. Riffaud, P. **Jannin** , Automatic matching of surgeries to predict surgeons next actions, Artificial Intelligence in Medicine, Elsevier, 2017. DOI : https://doi.org/10.1016/j.artmed.2017.03.007

25. A. Huaulmé, S. Voros, L. Riffaud, G. Forestier, A. Moreau-Gaudry, P. **Jannin** Distinguishing surgical behavior by sequential pattern discovery, Journal of Biomedical Informatics, Elsevier, 2017, 67, pp.34 - 41.

26. Pujol S, Cabeen R, Sébille SB, Yelnik J, François C, Fernandez Vidal S, Karachi C, Zhao Y, Cosgrove GR, **Jannin** P, Kikinis R, Bardinet E. In vivo Exploration of the Connectivity between the Subthalamic Nucleus and the Globus Pallidus in the Human Brain Using Multi-Fiber Tractography. Front Neuroanat. 2017 Jan 19;10:119

27. Ory, S., et al., Pre-frontal-insular-cerebellar modifications correlate with disgust feeling blunting after subthalamic stimulation: A positron emission tomography study in Parkinson's disease. J Neuropsychol, 2017. **11**(3): p. 378-395.

28. Bouget D., Allan M., Stoyanov D., **Jannin** P. Vision-based and marker-less surgical tool detection and tracking: a review of the literature, *Medical Image Analysis*, 2017 Jan;35:633-654

29. Frederic Monge, Dzhoshkun I. Shakir, Florence Le Jeune, Xavier Morandi, Nassir Navab, Pierre **Jannin**, Acquisition Models in Intraoperative Positron Surface Imaging, *Int J Comput Assist Radiol Surg*. 2017 Apr; 12(4):691-703.

- *2016*

30. Baumgarten C, Zhao Y, Sauleau P, Malrain C, **Jannin** P, Haegelen C., Image-guided preoperative prediction of pyramidal tract side effect in deep brain stimulation: proof of concept and application to the pyramidal tract side effect induced by pallidal stimulation. *J Med Imaging* (Bellingham). 2016 Apr;3(2)

31. Baumgarten C, Zhao Y, Sauleau P, Malrain C, **Jannin** P, Haegelen C. , Improvement of Pyramidal Tract Side Effect Prediction Using a Data-Driven Method in Subthalamic Stimulation. *IEEE Trans Biomed Eng*. 2016 Dec 9

32. M. Uemura, P. **Jannin**, M. Yamashita, M. Tomikawa, M. Hashizume, Procedural surgical skill assessment in laparoscopic training environments *Int J Comput Assist Radiol Surg*. 2016 Apr;11(4):543-52

33. Dergachyova O, Bouget D, Huaulmé A, Morandi X, **Jannin P.,** Automatic data-driven real-time segmentation and recognition of surgical workflow. *Int J Comput Assist Radiol Surg*. 2016 Jun;11(6):1081-9

34. Sauleau P, Drapier S, Duprez J, Houvenaghel JF, Dondaine T, Haegelen C, Drapier D, **Jannin** P, Robert G, Le Jeune F, Vérin M. Weight Gain following Pallidal Deep Brain Stimulation: A PET Study. *PLoS One*. 2016 Apr 12;11(4)

35. Despinoy F, Bouget D, Forestier G, Penet C, Zemiti N, Poignet P, **Jannin P.** Unsupervised Trajectory Segmentation for Surgical Gesture Recognition in Robotic Training. *IEEE Trans Biomed Eng*. 2016 Jun; 63(6):1280-91

36. Houvenaghel JF, Le Jeune F, Dondaine T, Esquevin A, Robert GH, Péron J, Haegelen C, Drapier S, **Jannin** P, Lozachmeur C, Argaud S, Duprez J, Drapier D, Vérin M, Sauleau P. Reduced Verbal Fluency following Subthalamic Deep Brain Stimulation: A Frontal-Related Cognitive Deficit? *PLoS One*. 2015 Oct 8;10(10):e0140083. doi: 10.1371/journal.pone.0140083. eCollection 2015. PMID: 26448131

- *2015*

9. Bouget, D.; Benenson, R. ; Omran, M. ; Riffaud, L. ; Schiele, B. ; **Jannin**, P. Detecting surgical tools by modelling local appearance and global shape *IEEE Transactions on Medical Imaging* 2015 Dec;34(12):2603-17

10. Essert C, Fernandez-Vidal S, Capobianco A, Haegelen C, Karachi C, Bardinet E, Marchal M, **Jannin** P. Statistical study of parameters for deep brain stimulation automatic preoperative planning of electrodes trajectories. *Int J Comput Assist Radiol Surg.* 2015 Dec;10(12):1973-83

11. Machno A, **Jannin** P, Dameron O, Korb W, Scheuermann G, Meixensberger J. Ontology for assessment studies of human-computer-interaction in surgery. *Artif Intell Med.* 2015 Feb;63(2):73-84

12. Morineau T, Riffaud L, Morandi X, Villain J, **Jannin** P. Work domain constraints for modelling surgical performance. *Int J Comput Assist Radiol Surg.* 2015 Oct;10(10):1589-97

13. Langner-Lemercier S, Drapier S, Naudet F, Le Clanche N, Houvenaghel JF, Sauleau P, **Jannin** P, Haegelen C, Le Jeune F, Vérin M. Preoperative brain metabolism and quality of life after subthalamic nucleus stimulation in Parkinson's disease. *J Neurol.* 2015 Apr;262(4):881-9

14. D'Albis T, Haegelen C, Essert C, Fernández-Vidal S, Lalys F, **Jannin** P., PyDBS: an automated image processing workflow for deep brain stimulation surgery. *Int J Comput Assist Radiol Surg.* 2015 Feb;10(2): 117-28

15. Katic D, Julliard C, Wekerle A, Kenngott H, Müller-Stich B, Dillmann R, Speidel S, **Jannin P**, Gibaud B. Lapontospm - an Ontology for Laparoscopic Surgeries and Its Application to Surgical Phase Recognition. *Int J Computer Assisted Radiology and Surgery.* 2015. 2015 Sep;10(9):1427-34

16. Forestier G, Riffaud L, **Jannin P**. Automatic phase prediction from low-level surgical activities. *Int J Comput Assist Radiol Surg.* 2015 Jun;10(6):833-41

- *2014*

17. Forestier G, Petitjean F, Riffaud L, **Jannin** P. Non-linear temporal scaling of surgical processes. *Artif Intell Med.* 2014 Nov;62(3):143-52

18. Yiming Xiao, **Pierre Jannin**, Tiziano D'Albis, Nicolas Guizard, Claire Haegelen, Lalys Florent, Marc Verin, D. Louis Collins, Investigation of morphometric variability of subthalamic nucleus, red nucleus and substantia nigra in advanced Parkinson's disease patients using automatic segmentation and PCA-based analysis, *Human Brain Mapping*, 2014 35(9):4330-44

19. Estelle Michinov, Eric Jamet, Virginie Dodeler, Claire Haegelen, **Pierre Jannin** Assessing Neurosurgical Non-Technical Skills: An exploratory study of a new behavioral marker system, *Journal of Evaluation in Clinical Practice*, 2014, 20(5): 582-588

20. L. Maier-Hein, A. Groch, A. Bartoli, S. Bodenstedt, G. Boissonnat, P.-L. Chang, N. T. Clancy, D. S. Elson, S. Haase, E. Heim, J. Hornegger, **P. Jannin**, H. Kenngott, T. Kilgus, B. Müller-Stich, D. Oladokun, S. Röhl, T. R. dos Santos, H.-P. Schlemmer, A. Seitel, S. Speidel, M. Wagner, and D. Stoyanov, Comparative Validation of Optical Techniques for Laparoscopic 3D Surface Reconstruction, *IEEE Transactions on Medical Imaging 2015* Oct;33(10):1913-30

21. Florent Lalys, Claire Haegelen, **Pierre Jannin**, Analysis of electrode deformations in Deep Brain Stimulation surgery, *International Journal of Computer Assisted Radiology and Surgery*, 2014, Jan;9(1):107-17

22. Florent Lalys, **Pierre Jannin**, Surgical Process Modelling: a review, *International Journal of Computer Assisted Radiology and Surgery*, 2014 May;9(3):495-511

- *2013*

23. Germain Forestier, Florent Lalys; Louis Collins; Jurgen Meixensberger; Shafik Wassef; Thomas Neumuth; Benoit Goulet; Laurent Riffaud; **Pierre Jannin**, Multi-site study of surgical practice in neurosurgery based on Surgical Process Models, *Journal of Biomedical Informatics*, 2013, Oct;46(5):822-9

24. JC. Gentric, **P. Jannin**, B. Trelhu, L. Riffaud, H. Raoult, JC. Ferré, JY. Gauvrit. Effects of low dose protocols in endovascular treatment for intracranial aneurysms: Development of Workflow Task Analysis during Cerebral Endovascular Procedures", *American Journal of Roentgenology*, 2013, Aug;201(2):W322-5

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118. Grova C, **Jannin** P, Buvat I, Benali H, Bansard JY, Biraben A and Gibaud B. From anatomic standardization analysis of perfusion SPECT data to perfusion pattern modelling. In *MICCAI 2003, Montreal (Canada), Lecture Notes in Computer Science*, volume 2879, pages 328-335. Springer Verlag, 2003.

· *2002*

119. **Jannin** P, Fitzpatrick JM, Hawkes DJ, Pennec X, Shahidi R and Vannier MW. White paper: Validation of Medical Image Processing in Image-guided Therapy. In Computer Assisted Radiology and Surgery 2002, Elsevier Science H.U. Lemke and al. Editors 2002.

120. Aubert-Broche B, Grova C, **Jannin P**, Buvat I, Benali H and Gibaud B. Detection of inter-hemispheric asymmetries of brain perfusion in SPECT, MICCAI 2002 Tokyo (Japan), Lecture Notes in Computer Science, volume 2488-I, pages 500-507. Springer 2002.

121. Scarabin JM, Broche B, Grova C, Argaud C, Schaeffer M and **Jannin** P. Perfusion weighted MRI: A new tool for epilepsy surgery. In Computer Assisted Radiology and Surgery 2002, Elsevier Science H.U. Lemke and al. Editors 2002.

122. Grova C, **Jannin** P, Biraben A, Buvat I, Benali H, Bernard AM, Scarabin JM and Gibaud B. Validation of MRI/ SPECT similarity-based registration methods using realistic simulations of normal and pathological SPECT data. In Computer Assisted Radiology and Surgery 2002, Elsevier Science H.U. Lemke and al. Editors 2002.

123. **Jannin** P, Raimbault M, Fleig OJ, Morandi X, Scarabin JM and Gibaud B. Neuronavigation multi-modalité. In J. Troccaz and P. Mermoz, editors, *Surgetica, Grenoble*, pages 174-180, 2002.

124. Raimbault M, **Jannin** P, Morandi X, Riffaud L and Gibaud B. Modèles de procédures chirurgicales pour la neurochirurgie guidèe par l'image. In J. Troccaz and P. Mermoz, editors, *Surgetica, Grenoble*, pages 217-223, 2002.

· *2001*

125. **Jannin** P, Raimbault M, Morandi X and Gibaud B. Modeling Surgical Procedures for Multimodal Image-Guided Neurosurgery, MICCAI 2001 Utrecht The Netherlands, W Niessen and M Viergever (Eds), Lecture Notes in Computer Science, 2208, pp 565-572.

126. Grova C, Biraben A, Scarabin JM, **Jannin** P, Buvat I, Benali H and Gibaud B. A methodology to validate MRI / SPECT registration methods using realistic simulated SPECT data. MICCAI 2001 Utrecht The Netherlands , W Niessen and M Viergever (Eds), Lecture Notes in Computer Science, 2208, pp 275-282.

127. **Jannin** P, Raimbault M, Morandi X, Seigneuret E and Gibaud B. Design of a neurosurgical gestures model for multimodal image guided surgery", Computer Assisted Radiology and Surgery 2001 Elsevier Science H.U. Lemke and al. Editors, pp 102-107.

128. Fleig OJ, Devernay F, Scarabin JM and **Jannin** P. Stereoscopic reconstruction of the surgical field in neurosurgery". Computer Assited Radiology and Surgery, 2001 Elsevier Science H.U. Lemke and al. Editors, pp 259-264.

· *2000*

129. **Jannin** P, Fleig OJ, Seigneuret E, Morandi X, Raimbault M and Scarabin JM. Multimodal and Multi-Informational Neuro-Navigation , Computer Assisted Radiology and Surgery 2000 (San Fransisco/USA) , H.U. Lemke and al. Editors, pp 167-172.

· *1999*

130. **Jannin** P, Grova C, Schwartz D, Barillot C and Gibaud B. Visual qualitative comparison between functional neuro-imaging (MEG, fMRI, SPECT), Computer Assisted Radiology and Surgery 1999, H.U. Lemke and al. Editors pp 238-243.

131. Scarabin JM, Croci S, **Jannin** P, Romeas R, Maurincomme E, Behague M and Carsin M. A new concept of stereotactic room with multimodal imaging, Computer Assisted Radiology and Surgery 1999, H.U. Lemke and al. Editors pp 841-845.

· *1997*

132. **Jannin** P, Bouliou A *et al.* Visual matching between real and virtual image guided neurosurgery , SPIE Medical Imaging. 1997, Vol 3031, p518-526.

133. Scarabin JM, **Jannin** P, Schwartz D and Morandi X. MEG and 3D Navigation in Image Guided Neurosurgery », Computer Assisted Radiology and Surgery 1997, H.U. Lemke and al. Editors, pp. 767-771.

· *Before*

134. **Jannin** P, Scarabin JM, Rolland Y and Schwartz D, A real 3D approach for the simulation of neuro-surgical stereotactic act, SPIE Medical Imaging VIII : Image Capture, Formatting, and Display, Yongmin Kim, Editor, Vol. 2164, 1994, pp 155-166.

135. **Jannin** P, Mével G, Gandon Y and Cordonnier E. Design of user interface in medical imaging : lessons of a 3D application definition, Medical Imaging VI : Image Capture, Formatting, and Display, Yongmin Kim, Editor, Newport Beach, Californie, 1992 Proc. SPIE, Vol. 1653, p 410-421.

136. **Jannin** P, Gibaud B, Barillot C, Scarabin JM and Bouliou A. Octree encoding with volume and surface information in medical imaging, 9ème Conférence annuelle de l'"Engineering in Medecine and Biology Society" Boston, 1987.

· *Other national conference publications*

137. Gibaud B, Penet C, **Jannin** P. OntoSPM: a core ontology of surgical procedure models. Surgetica 2014. Chambery (France)

138. Garraud C, Gibaud B, Penet C, Cazuguel G, Dardenne G, **Jannin** P. An ontology-based software for the analysis of surgical process model. Surgetica 2014. Chambery (France)

139. Germain Forestier; Florent Lalys; Laurent Riffaud; Brivael Trelhu; Pierre **Jannin**, Clustering de séquences d'activités pour l'étude de procédures neurochirurgicales *12e Conférence Internationale Francophone sur l'Extraction et la Gestion des Connaissances*, Feb 2012, Bordeaux, France. pp. 489-494

140. Florent Lalys, Claire Haegelen, Maroua Mehri, Pierre **Jannin**, Anatomo-Clinical Atlases in SubThalamic Deep Brain Stimulation: correlating clinical data and electrode contacts coordinates, Troisième réunion annuelle de l'ITMO Technologies pour la Santé, 2011 October 3-4, Tours

141. Florent Lalys, Laurent Riffaud, David Bouget, Pierre **Jannin**, Recognition of high-level surgical tasks in the OR, Troisième réunion annuelle de l'ITMO Technologies pour la Santé, 2011 October 3-4, Tours

142. Claire Haegelen, Florent Lalys, Pierrick Coupé, Vladimir Fonov, D. Louis Collins, Pierre **Jannin**, Segmentation of deep brain structures on MRI of patients with Parkinson's disease, Troisième réunion annuelle de l'ITMO Technologies pour la Santé, 2011 October 3-4, Tours

143. Florent Lalys, Laurent Riffaud, Xavier Morandi, Pierre **Jannin** Analyse de vidéos de microscopes chirurgicaux pour la reconnaissance automatique d'étapes en combinant SVM et HMM, ORASIS 2011

144. Haegelen, Claire, Lalys, Florent, **Jannin**, Pierre, Abadie, Alexandre, Collins, D. Louis, Brassier, Gilles, et Morandi, Xavier

 Validation de la Segmentation des Ganglions de la Base sur un Template IRM 3 Tesla, Société de Neurochirurgie de Langue Française, SNCLF, 2010

145. Morineau, T., Le Moëllic N, Morandi, X., & **Jannin** P. L'imagerie médicale en neurochirurgie : du réalisme scientifique au réalisme écologique. In F. Douguet, T. Fillaut & F.-X. Schweyer (Eds). La santé par et à travers l'image. Rennes : Presses de l'EHESP. 2009

146. Moëllic N., Morandi, X., **Jannin**,& Morineau, T.L'effet intermédiaire dans l'expertise médicale et la formation de chuncks: une interprétation écologique. Journées EPIQUE, Nice, sept 2009.

147. Brivael Trelhu, Florent Lalys, Laurent Riffaud, Xavier Morandi, **Pierre Jannin**: Analyse de données pour la construction de modèles de procédures neurochirurgicales. *EGC 2009*: 427-432

148. Morineau T, Le Moëllic N, Morandi X, **Jannin P**. La capacité de l'imagerie médicale en neurochirurgie à rendre compte des contraintes du domaine de travail. Journée "Images et acteurs du champ de la santé", UBO, Brest : 4 avril 2008.

149. J-C Ferré, B Godey, P **Jannin**, M Carsin, B Carsin-Nicol, E Le Rumeur Activation du cortex auditif primaire par IRMf silencieuse, *Journées Françaises de Radiologie Paris 2004*

150. Scarabin JM, Croci S, **Jannin P**, Romeas R, Maurincomme E, Behague M and Carsin M. A new concept of stereotactic room with multimodal imaging. In XIIth Meeting of the World Society of Stereotactic and Functional Neurosurgery, Lyon, 1997.

151. Grova C, **Jannin P**, Le Rumeur E and Morandi X. Fusion de données orientée vers la comparaison MEG/IRMf : une approche qualitative. In Réunion Scientifique inaugurale de la Société d'anatomie fonctionnelle cérébrale (SAFC), ENST, Paris, 1999.

152. Grova C, **Jannin P**, Le Rumeur E, Morandi X and Gibaud B. Comparaison qualitative de données anatomo-fonctionnelles (MEG/IRMf) pour la réalisation d'une cartographie anatomo-fonctionnelle. In 10ième Forum du jeune chercheur en Génie Biologique et Médical, Tours, 2000.

153. Grova C, **Jannin P**, Biraben A and Scarabin JM. Fusion de données anatomo-fonctionnelles pour l'aide au diagnostic des épilepsies pharmaco-résistantes: problème de la validation. In Journées Françaises de l'épilepsie, Epilepsies, 12, pages 256-257, 2000.

154. Grova C, **Jannin P**, Biraben A and Scarabin JM. Fusion de données anatomo-fonctionnelles pour l'aide au diagnostic des épilepsies pharmaco-résistantes: problème de la validation. In Réunion de la Société Française de Biophysique et de Médecine Nucléaire (SFBMN), 2000.

155. Grova C, **Jannin P**, Biraben A, Scarabin JM, Benali H and Gibaud B. Generation of realistic models of ictal SPECT using Monte-Carlo simulations. In Human Brain Mapping, Neuroimage, 13 (6), page S137, 2001.

156. Grova C, **Jannin P**, Biraben A, Scarabin JM, Buvat I, Benali H and Gibaud B. Méthodologie de validation de méthodes de recalage TEMP / IRM à l'aide de simulations réalistes de données TEMP. In 11ième Forum Des Jeunes Chercheurs En Génie Biologique et Médical, Compiégne, 2001.

157. Grova C, **Jannin P**, Scarabin JM and Gibaud B. Multimodal data fusion: state of the art, issues and perspectives. Application: SPECT/MRI data fusion in epilepsy. In Neurophysiologie Clinique / Clinical Neurophysiology, 32 (2), page 9, 2001.

158. Broche B, Grova C, **Jannin P**, Buvat I, Benali H and Gibaud B. Détection d'asymétries inter-hémisphériques sur la perfusion cérébrale en TEMP. In Réunion annuelle de la Société d'Anatomie Fonctionnelle Cérébrale, Paris, 2002.

159. **Jannin P**, Fleig OJ, Morandi X, Riffaud L, Raimbault M, Scarabin JM, and Gibaud B. Neuronavigation multi-modalité. In Réunion annuelle de la Société d'Anatomie Fonctionnelle Cérébrale, Paris, 2002.

160. Morandi X, Raimbault M, Riffaud L, Gibaud B, Seigneuret E and **Jannin P** Modélisation de procédures chirurgicales pour la neurochirurgie guidée par l'image. In Société de Neurochirurgie de Langue Française, Paris, 2002.

161. Le Rumeur E, Taussig D, Morandi X, Trebon P, Riffaud L, Seigneuret E, **Jannin P**, Allard M. Cartographie et latéralité des aires corticales du langage : étude comparative par IRM fonctionnelle chez des volontaires sains et des patients porteurs de lésion périsylvienne et/ou d'épilepsie chronique partielle pharmaco-résistante. 10ème congrès du Groupe de Recherche sur les Applications du Magnétisme en Médecine; Angers, Février 2003

· **Technological transfert and industrial collaboration**

· *Software protected at APP*

- AdCAS (2016)
- Park-MedAtlis (2014) IDDN.FR.001.440011.000.D.P.2014.000.31230
- pyDBS (2013) IDDN.FR.001.490012.000.S.P.2013.000.31230
- ProcSide (Surgical Process Modeling Acquisition software): 2012
- Vignes (image guided neurosurgery): 2008
- SIM3D (3D visualization), SIMMORPHO (segmentation), SIMAP (registration and visualization of both pre and intra operative images), SIMIV (display and interaction in medical imaging) : 1997,1998

· *Patents*

- Proficiency Assessment System and Method for Deep Brain Stimulation 17306370.2 - 1666 (2017)
- Procédé de simulation de stimulation cérébrale, dispositif et programme d'ordinateur correspondant 1000254773 (2014)
- Système de Simulation, dispositifs, méthodes et programmes correspondants. 1000268342 (2014)

· *Grants*

Industrial collaboration and grants :
- Carl Zeiss : 4 3-year PhD fundings: 1998, 2001, 2009, 2012
- Medtronic SNT : 1 Ph D funding in 2003
- Adicor Rennes : 1 M Sc funding

International grants :
- IMPACT (Japan) (2017-2019)

Public grants :
- National "Grand défis du numérique" CONDOR (2016-2019)
- National "Investissement d'Avenir" IRT B-COM (2013-2016)
- National "Investissement d'Avenir" LabEX CominLabs on Surgical Process Modeling (2013-2016) and non technical surgical skills training (2016-2019)
- National ANR "Projet blanc" on Planning for Deep Brain Stimulation (2011-2014)
- ODL INRIA for software development in Image Guided Neurosurgery (2008-2010)
- Projet de Recherche d'Intérêt Régional « PlogICI » (2004-2006)
- RNTS « Plamaivic » (2002-2004) : Validation on medical image processing
- Région Bretagne on multimodal neuronavigation (99-00)

Fundation Grants:
- DBS-COMP (2017-2020) Fondation pour la Recherche Médicale

- pyDBS2 (2015-2016) INCR
- M-DBS (2016-2020) INCR

- **Scientific animation**

- *Invited lectures*

  - *2019*

162. « Operating Room of the Future », Digital Revolution, Tokyo Forum, Tokyo (Japan) 07/12/2019

163. « Operating Room of the Future: AI and Human Factors », Seminar at The University of Tokyo, Tokyo (Japon), 05/12/2019

164. « Etude et modélisation des compétences chirurgicales techniques et non techniques », Invité d'Honneur CAOS France, SOFCOT 2019, Palais des congrès, Paris, 13/11/2019

165. « Bloc Chirurgical du Futur : Réalité virtuelle, Robotique et Science des Données Chirurgicales » Journées ITMO Santé, Rennes-France 3/10/19

166. « Surgical Skill Analysis and Modeling » Summer School of Surgical Robotics, Montpellier, 24/09/2019

167. "Surgical Data Science » 23rd July 2019, University of Verona, Italy, GB

168. "Surgical Skill Analysis and Understanding » 9 July 2019, University of Verona, Italy

169. "What's next for surgeons » Congrès de la Société Francophone de Chirurgie Oncologique, 17 May 2019, Montpellier, FR

170. "Surgical Training: Challenges and Possible Solutions », SPIGC/CRAS Italian Congress of Young Surgeons, 21 March 2019, Genova, Italy

171. "Surgical Skill Analysis and Modeling » Feb 2019, 28/02/19 Stanford University USA

172. "Surgical Skill Analysis and Modeling » Feb 2019, Sorbonne University, Paris, FR

  - *2018*

173. "Learning Procedural Skills" Hamlyn Symposium on Medical Robotics "Workshop on Autonomous Surgical Robots" on June 28 2018, at Imperial College London, GB

174. « Surgical Skill Analysis and Modeling: Cognition for Surgical Robotics » Summer School on Control for Surgical Robots (COSUR 18), Verona Italy, July 9-13 2018

175. « Validation and Evaluation Methodology for Image Guided Interventions» Seminar at The University of Tokyo, Tokyo (Japon), 23/04/2018

176. « Surgical Skill Analysis and Modeling» Seminar at The University of Tokyo, Tokyo (Japon), 16/04/2018

  - *2017*

177. « Surgical Skill Analysis and Modeling » ORF Simulation Forum Speaker Series CSTAR University of Western Ontario, London, Ontario (CAN), 10/08/2017

178. « Surgical Data Science for Decision Making Support and Knowledge Discovery in Deep Brain Stimulation » BIRC Speaker Series Roberts Research Institute, London, Ontario (CAN), 11/08/2017

179. « Surgical Skill Analysis and Modeling » SickKids Hospital, Toronto, Ontario (CAN), 08/08/2017

180. "Surgical Workflow Analysis for Skill Analysis and Situation Awareness" The Hamlyn Symposium on Medical Robotics - Workshop on Surgical Workflow and Process Modeling - on June 28 2017, at Imperial College London, GB

181. « Surgical Analysis and Modeling » Seminar at Kyushu University, Fukuoka (Japon), 23/05/2017

182. « Surgical Data Science for Decision Making Support and Knowledge Discovery in Deep Brain Stimulation » ESIEE, Paris, 19/01/2017

  - *2016*

183. "Analyzing and Modeling Surgical Processes: Application for Simulation" Webinar from the International Society for Simulation in Healthcare" - on Nov 3rd 2016

184. "Surgical Process Modeling: Methods and Applications" MICCAI CARE Workshop (Computer Assisted Robotic Endoscopy) - on October 17th 2016 Athens, Greece

185. "Surgical Skill Analysis and Modeling" Asian Conference on Computer Aided Surgery ACCAS 2016 - on October 14th 2016, in Daejon, Korea

186. "Computer Aided Surgery" IROS 2016 conference - on October 13th 2016, in Daejon, Korea

187. "Model-Guided Neurosurgery: Methods and Applications for Deep Brain Stimulation" Hamlyn 2015 Winter School - on December 8 2015, at Imperial College London, GB

188. "Surgical Skills Modeling and Monitoring" Première conférence "Surgical Data Science" - on June 8 2016, Heidelberg, Allemagne

189. "Surgical Imaging and Data for Deep Brain Stimulation" The Hamlyn Symposium on Medical Robotics - Workshop on Surgical Imaging, Guidance and Augmented Reality - on June 28 2016, at Imperial College London, GB

190. "Surgical Process Modeling: Methods and Applications" ICCAS Digital Operating Room Summer School -on September 15th 2016 Leipzig, Germany

191. "Surgical Data Science and DPM for Decision Making Support and Knowledge Discovery in Deep Brain Stimulation" ICCAS Digital Operating Room Summer School" - on September 16th 2016 Leipzig, Germany

192. "Surgical Skills Modeling and Monitoring" ICCAS Summer School on June 8 2016, Heidelberg, Allemagne

193. « Training of Surgical Procedural Knowledge » Seminar at Kyushu University, Fukuoka (Japon), 18/05/2016

194. "Surgical Process Modeling: Methods and Applications" January 14 2016, UFR27 : Mathématiques et Informatique Université Paris 1 Panthéon Sorbonne, Paris, France

- *2015*

195. "Model-Guided Neurosurgery: Methods and Applications for Deep Brain Simulation" Hamlyn 2015 Winter School on Surgical Imaging and Vision - December 8 2015, at Imperial College London, GB

196. "Surgical Skills Modeling and Monitoring" 7th Summer School on SURGICAL ROBOTICS - september 8 2015, Montpellier, FRANCE

197. "Model-Guided Neurosurgery: Methods and Applications for Deep Brain Simulation" 3rd Biomedical Image Analysis Summer School : Modalities, Methodologies & Clinical Research - Paris, July 6-10, 2015, FRANCE

198. « Model Guided Surgery » International Joint Conference on Medical Innovation, 4th International Workshop of HALIDAT-GC, 2nd International Symposium of WaFLES, Chiba University, Chiba (Japan), 06/03/2015

199. « Models for Surgical Assistance and Evaluation: Applications in Neurosurgery » Seminar at Université de Montpellier 2, LIRRM, Montpellier (France), 18/03/2015

- *2014*

200. «Modélisation des Processus Chirurgicaux: *Surgical Process Modelling*» GDR STIC-Santé, GT «Modélisation et Simulation, Paris (F) 05/06/2014

201. « Surgical Skill Models for Computer Assisted Surgery » SINTEF and Dept. of Medical Technology, NTNU (Université Technologique de Trondheim), Trondheim (N), 21/05/2014

202. « Images et modèles pour assister la préparation et l'évaluation de la stimulation cérébrale profonde : le projet ACouStiC » TECHNOFERENCE # 8 E-Santé, Pole de compétitivité Images et Réseaux, Laval (F) 27/02/2014

- *2013*

203. « Surgical Skill Models for Computer Assisted Surgery » Hamlyn Distinguished Lecture Series, The Hamlyn Centre, Imperial College London (UK), 26/11/2013

204. « Surgical Skill Models in Computer Assisted Surgery » MITI, Klinikum rechts der Isar Technische Universität München, Munich (Germany), 20/11/2013

205. « Models for Surgical Assistance and Evaluation » IRCAD, Strasbourg (France), 08/11/2013

206. « Modélisation des Compétences Chirurgicales » CGEIET, Ministère de l'industrie, Paris (France), 09/10/2013

207. « Surgical Process Modeling for Intelligent CAI: Methods and Applications » Invited talk at The 6th International Workshop on Medical Imaging and Augmented Reality, MIAR 2013, Nagoya, Japan September 22 2013

208. « Introduction to Workflow Modeling » International Conference of Computer Assisted Radiology and Surgery, Heidelberg (Allemagne), 27/06/2013

209. « Models for Surgical Assistance and Evaluation: Applications in Neurosurgery » Seminar at Kyushu University, Fukuoka (Japon), 05/06/2013

210. "Surgical Process Modeling" Conference Medicine Meets Virtual Reality, Newport Beach (USA), February 2013

211. "Surgical Process Modeling: Methods And Applications " Scuola Di Dottorato In Scienze Della Vita E Della Salute, Dottorato In Tecnologie Applicate Alle Scienze Chirurgiche, University Of Torino, February 1st 2013

- *2012*

212. "Surgical Process Modeling: Where are we ? Where do we go ?" ICCAS Leipzig Forum CAS, Leipzig, Germany, October 8 2012

213. "Knowledge Models for Deep Brain Stimulation" First International Symposium on Deep Brain Connectomics, Clermont-Ferrand, France, September 28-29 2012

214. "Model Based Computer Assisted Surgery: A New Paradigm for Surgical Decision Making Support" Invited Plenary Talk at "51st Annual Conference of Japanese Society for Medical and Biological Engineering, Fukuoka, Japan, May 12th, 2012

215. "Surgical Process Modeling: Methods and Applications" First International Workshop on Cognitive Robotics in Surgery, Heidelberg, Germany, January 26-28 2012

- *2011*

216. "Assessment methodology in computer assisted surgical interventions " Conference Medicine Meets Virtual Reality, Newport Beach (USA), February 2011

217. "Surgical Process Models" European Science Foundation Exploratory Workshop on IMAGE-GUIDED LAPAROSCOPIC THERAPIES, June 15th , Caceres (Spain)

218. "Management and Assessment of OR Systems Integration via Surgical Process Models » 1st Educational Course on Computer Surgery MICARS, October 20-21, 2011, Barcelona (Spain)

- *2010*

219. "Model Guided Neurosurgery" Joint Technical Lecture, IEEE EMB/RA/CS Societies Chapter of IEEE Kingston Section and School of Computing PerkLab at Queen's University, Kingston, Ontario, Canada, July 14, 2010

220. "Model Guided Neurosurgery" Thayer School of Engineering, Dartmouth College, Hanover, NH, USA, March, 5th, 2010

221. " An Introduction to Surgical Process Modeling" Montreal Neurological Institute, Montreal, Canada, February, 2nd, 2010

- *2009*

222. " Models in Deep Brain Stimulation" Montreal Neurological Institute, Montreal, Canada, November 2009

223. " Models in Computer Assisted Neurosurgery" 2nd INRIA-NIH Biomedical Computing Workshop, Paris

· *2008*

224. "Model Guided Therapy" Computer Assisted Radiology and Surgery. June 25, 2008, Barcelona (E)

· 2007

225. "Model guided Surgery" and "Validation in medical image processing" Montreal Neurological Institute, Montreal, Canada, July 2007

226. "Modeling surgical procedures". Workshop on Surgical Workflows, Computer Assisted Radiology and Surgery. Saturday, June 30, 2007, Berlin (D)

· 2006

227. "Models of surgical procedures in Computer Assisted NeuroSurgery", IST 2006, November 22, Helsinki

228. "From intuitive to scientific computer assisted neurosurgery". Computer Assisted Radiology and Surgery. Saturday, July 1, 2006, Osaka (J)

229. "Validation of Medical Image Processing". Joint Workshop on Intelligent Media Integration and Nagoya-MIC. Tuesday, July 4, 2006, Nagoya (J)

230. "Information Guided Neurosurgery: From Multimodal Images to Surgical Knowledge". Joint Workshop on Intelligent Media Integration and Nagoya-MIC. Tuesday, July 4, 2006, Nagoya (J)

231. "Models of surgical procedures in computer assisted neurosurgery". Annual Meeting of the International Brain Mapping and Intra operative Surgical Planning Society, Clermont Ferrand (F) Thursday, September 7, 2006

232. Processus neurochirurgical assisté par l'information et la connaissance. 13emes Rencontres INRIA – Industrie. Les Sciences et Technologies de l'Information et de la Communication au service de la Médecine. Rocquencourt, 24 janvier 2006

233. La Neurochirurgie Assistée par l'Information et la Connaissance : Arguments pour la modélisation des procédures, Société Française de Neurochirurgie, Meeting of the French neurological surgeons College, 29 Mars 2006 Caen

· 2005

234. "From Intuitive to Scientific Computer Assisted Surgery". 4th Leipzig Forum CAS, December 12th, 2005, Leipzig (D)

235. "Validation of medical image processing for computer aided surgery: terminology and methodology", Eight Israeli Symposium on Computer-Aided Surgery, Medical Robotics, and Medical Imaging (ISRACAS), Thursday May 19, 2005, Medical Center Auditorium, Rabin Medical Center (Bellinson) Petach Tikva, ISRAEL

· 2004-2003

236. « Fusion d'images réelles et virtuelles en neurochirurgie » Atelier des Technologies de l'Information et de la Communication (TIC) et de la Santé, 14 septembre 2004, ESIEA, Laval, France

237. « Validation in Medical Image Processing » 2nd Forum « Computer und Roboter-Assistierte Chirurgie », Leipzig, 13-14 october 2003

238. « Validation of image processing in image guided therapy » at the international session of the German Congress for Computer Assisted Surgery, CURAC 2003, Nuremberg, November 2003

239. « Principes du recalage d'images et introduction à la fusion », French Forum on Research in Medical Imaging, Journées de Recherche en Imagerie Médicale, Forum des Jeunes Chercheurs en GBM, INSERM, Nantes, May 2003

240. « Validation en traitement d'images médicales » Action Spécifique du CNRS ICOMIM « Intégration de COnnaissances et Modélisation en Imagerie Médicale », Paris, June 2003

· Before

241. « Image Guided Surgery in France» British Congress of Radiology. UK Radiological Congress, Birmingham, UK, June 2002

242. « Image Guided Surgery in France and in Rennes», Deutsches Krebsforschungszentrum DKFZ (German Cancer Research Center), Heidelberg, Germany, October 2002

243. « MEG, Data Fusion and Neurosurgery: Rennes approach », European Workshop on MEG and EEG, Erlangen, Germany, May 1999

244. « Multimodal data fusion in medical imaging », 14th Symposium of the BVZF/SBPH, Bruges, Belgium, October 1998

245. « Fusion de données multimodalité en imagerie médicale », Congrès de Radiophysique, Lille, January 1997

- *Multicenter projects*

    - Manager of the validation part for image registration in the national RNTS "Plamaivic" project (2002-2004)

- *Organization of workshops/conferences (non exhaustive):*

    - President of CARS conference 2019, Rennes (France) 17-21 June 2019
    - Program chair of the MICCAI 2017 international conference (Quebec City-Canada)
    - Co-General chair of the IPCAI from 2010 to 2016 international conferences (LNCS proceedings)
    - President of the 22nd Annual Conference of the International Society for Computer Aided Surgery Berlin (Germany) June 2018
    - President of the 21st Annual Conference of the International Society for Computer Aided Surgery Barcelona (Spain) June 2017
    - President of the 20th Annual Conference of the International Society for Computer Aided Surgery Heidelberg (Germany) June 2016
    - President of the 19th Annual Conference of the International Society for Computer Aided Surgery Barcelona (Spain) June 2015
    - Program chair of the 7th International Conference on Medical Imaging and Augmented Reality, MIAR 2016, August 24-26, 2016, University of Bern, Bern, Switzerland.
    - Congress Organizing and Program Committee member of Computer Assisted Radiology and Surgery from 2005
    - Co-chair of the 2013 MICCAI workshop and tutorial committee (Nagoya, Japan)
    - Organization, management and co-chair of "1st ISCAS SURGICAL WORKSHOP ON COMPUTER-AIDED ENT AND MAXILLOFACIAL SURGERY"(CME credits) at CARS 2009 in Berlin (D)
    - Organization, management and co-chair of "2nd ISCAS SURGICAL WORKSHOP ON NeuroSURGERY"(CME credits) at CARS 2010 in Geneva
    - Organization, management and presentation of a workshop (2 hours) on "Validation in medical image registration" at SPIE Medical Imaging 2007 conference in San Diego
    - Organization, management and co-chair of "Modeling and Monitoring of Computer Assisted Interventions (M2CAI)" at MICCAI from 2009
    - Program Committee member of SPIE Medical Imaging and Medicine Meets Virtual Reality (MMVR) conference
    - Program Commitee member of ICS4Med 2011 - 1st International Workshop on Interactive Computing Systems for Medicine and Health Care

- *Journals*
    - Area editor of "International Journal for Computer Aided Radiology and Surgery" (Springer)
    - Editorial board member of "Computer Aided Surgery" (Informa publisher)
    - Reviewer and associate editor for IEEE Transactions on Medical Imaging, IEEE Engineering in Medicine and Biology, IEEE Transactions in Information Technology in Biomedicine, Medical Image Analysis, Academic Radiology, American Journal of NeuroRadiology, Neuroimage, IEEE Transactions in Biomedical Engineering, IMIA Yearbook of Medical Informatics and for international conferences CARS, SPIE Medical Imaging, MICCAI, Asian Conference on Computer Vision (ACCV), and IPCAI

- *Miscellaneous*
    - SPIE courses: "Validation in Medical Image Processing" SPIE 2008, 2009 and 2010 at SPIE Medical Imaging San Diego-Orlando (USA)

- Tutorial at Computer Assisted Radiology and Surgery. "Tutorial on Assessment of Medical Image Processing for CAS - Validation in Medical Image Processing Tools for CAS" 2008, Barcelona (E), 2009, Berlin (D), 2010 Geneva, 2011 Berlin (D)
- Management and Chair of 4 special sessions on Validation in Medical Image Processing at the CARS conference Computer Assisted Radiology and Surgery (CARS 2002 Paris, CARS 2003 London, CARS 2004 Chicago, CARS 2005 Berlin)
- Organization, management and presentation of a tutorial (4 hours) on Validation in medical image processing at MICCAI 2003 conference in Montreal
- Member of the patent and technological transfer committee of the University of Rennes from 2002

Project reviews
- Expert for a working group on new neurosurgical procedures accreditation at the ANAES governmental organization. Paris, May 2004
- Expert for ANR Call "Technologies pour la Santé" 2007
- Expert for ANR Call "Blanc" 2011
- Expert for Région Rhone-Alpes 2012
- Expert for BPI France 2014
- Expert Wellcome Trust 2016
- Expert German Research Foundation AO SFB 2015
- Expert Swiss National Science Foundation 2015
- Expert IBSAM AO Ville de Brest 2015

Large-public Communication

- *Media coverage*
  1. « Votre santé m'intéresse » BFM-TV 17 Janvier 2018
  2. « Les Matinales » France 3 Bretagne TV November 9 2017
  3. « Simuler pour mieux soigner », L'Express, March 2017
  4. « Immersion au coeur de la réalité mixte », Sciences et Avenir, March 2016
  5. « Neurochirurgie assistée par ordinateur », Ouest-France, March 2016
  6. « Neurochirurgie guidée en 3D », Rennes Métropole, Feb-March 2016
  7. « Têtes chercheuses - Pierre Jannin: Créateur d'outils "intelligents" pour les neurochirurgiens », Sciences et Santé, Nov. 2014
  8. Article de vulgarisation "Fusion d'images : des outils au service des neurochirurgiens" pour INTERSTICES, journal web de l'INRIA Juin 2006

- *Invited talks*
  1. « Le Bloc opératoire du futur » Les Matinales, Le Pool, 21/11/2019
  2. « Le Bloc Opératoire du Futur : Réalité virtuelle, Robotique et Science des Données Chirurgicales » Maison associatif de la Santé - France Asso Santé - Harmonie Mutuelle , 5/11/2019
  3. MeetUp Machine Learning Le Pool « Science des données chirurgicales » September 2019
  4. Lycée Bréquigny Rennes Février 2019
  5. Festival Utopiales Table ronde « Les serious games », Nantes, Octobre 2018
  6. « Ouvrir les champs de l'imaginaire: quand l'intelligence artificielle se met au service de la médecine et de la neurochirurgie » Les Jeudis de l'Espace des Sciences, Théâtre de Saint Malo, 11/10/18
  7. TedX Rennes, 8/04/18
  8. Pint of Science, Semaine du cerveau « French Brain Week », March 14th, 2017, Rennes
  9. Semaine du cerveau « French Brain Week », March 13rd, 2017, Rennes
  10. Festival Utopiales Table ronde « Le voyage fantastique », Nantes, Octobre 2016
  11. Inserm Science tour, Rennes, Octobre 2014

12. Présentations en Lycée: Lycée Pasteur 1ère S, Nov 2015 Paris, Lycée Victor et Hélène Basch 2nde Rennes Mars 2012
13. Présentation à la «Fête de la Science» 10/2013, Rennes
14. Présentation à la «Fête de la Science» 10/2005, Rennes
15. Présentation à la «Fête de la Science» «Quartiers des Sciences», Table ronde «L'imagerie et le numérique au service de la santé» 15/10/2011, Paris
16. Présentation sur la Fusion d'images médicales pour la neurochirurgie 15 et 16 Octobre 2005 pour les 30 ans de l'IRISA