

# Dr Franck P. VIDAL

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Member of EuroGraphics

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## CURRENT OCCUPATION

I am holding a lectureship position at Bangor University in the School of Computer Science.

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## RESEARCH INTERESTS

Computer graphics, medical imaging, medical virtual environment, haptics, graphics processor unit (GPU) programming, X-ray imaging, Computed Tomography (CT), positron emission tomography (PET) imaging, evolutionary algorithms, interventional radiology training, radiation oncology.

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## COMPUTING KNOWLEDGE

Medical virtual environment, computer graphics (including OpenGL, DirectX & M3G), haptics (H3D & Chai3D), image and signal processing, evolutionary algorithms, GPU programming (CUDA & OpenGL), databases, network.  
Languages : C, C++, OpenGL Shading Language, Matlab, Python, Unix Shell scripts, SQL, PS/SQL, SQL+, Cobol, Prolog, L<sup>A</sup>T<sub>E</sub>X, HTML, XHTML, Java-script, Visual Basic, VRML, X3D.  
Operating systems : Linux and Windows.

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## EDUCATION

- 2003-8**      **PhD in computer science**, School of Computer Science, Bangor University, UK.
- 2002-3**      **“Diplôme d’Études Approfondies (DEA) Images & Systèmes” (5<sup>th</sup> year research master degree in image and signal processing)**, Institut National des Sciences Appliquées (INSA), Lyon, France.
- 2001-2**      **MSc in Computer-Aided Graphical Technology Applications (CAGTA)**, School of Computing & Mathematics, University of Teesside, UK.
- 2001-2**      **“Diplôme d’Université d’études Européennes Technologiques (DUEET)” (4<sup>th</sup> year degree validating one year studying in a foreign country)**, IUT Reims-Châlons-Charleville, University of Reims, France.
- 2000-1**      **“Diplôme d’Université Ingénierie de l’Image (DUIIC)” (3<sup>rd</sup> year degree in Computer Graphics & Image Processing)**, IUT Reims-Châlons-Charleville, University of Reims, France.
- 1998-2000**    **“Diplôme Universitaire de Technologie (DUT), spécialité informatique, option génie informatique”, (2<sup>nd</sup> year degree in computer science)**, University Claude Bernard Lyon 1, France.

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## HONORS AND AWARDS (INC. GRANTS, etc.)

- 2013-16**      “RASimAs: Regional Anaesthesia Simulator and Assistant”. **FP7 STREP**, from the European Commission, €3.322.000,00.
- 2012-16**      **F.P. Vidal**: “Fly4PET: Fly Algorithm in PET Reconstruction for Radiotherapy Treatment Planning”. **FP7 Marie Curie Actions - Career Integration Grant (CIG)**, from the European Commission, €100,000.
- 2012**          P.-F. Villard, **F.P. Vidal**, F. Bello and N.W. John: “A Method to Compute Respiration Parameters for Patient-based Simulators”. **Winner of the best poster award at Medicine Meets Virtual Reality 19 - NextMed (MMVR19)**.
- 2009**          **F.P. Vidal**, M. Garnier, N. Freud, J.M. Létang and N.W. John: “Simulation of X-ray Attenuation on the GPU”. **Winner of Ken Brodrie Prize** for best paper at *Theory and Practice of Computer Graphics 2009 (TPCG 2009)*.
- 2009**          F. Bello, A. Bulpitt, D.A. Gould, R. Holbrey, C. Hunt, N.W. John, S. Johnson, R. Phillips, A. Sinha, **F.P. Vidal**, P.-F. Villard and H. Woolnough: “ImaGiNe-S : Imaging Guided Needle Simulation”. **Second prize and winner of €300**, in *Eurographics 2009 - Medical Prize* for its innovative use of computer graphics in a complex system that is already far advanced towards clinical use.

- 2005** **F.P. Vidal:** “Developing a needle guidance virtual environment with patient specific data and force feedback”. **International Travel Grant**, from The Royal Academy of Engineering (UK), £300 to cover my personal travel and living expenses to present an article at CARS '05.
- 2003** **F.P. Vidal, J.M. Létang and G. Peix:** “PSF assessment and artefact reduction in synchrotron 3D microtomography”. **Standard European Synchrotron Radiation Facility Proposal** (France) to support non-stop experiments carried out at ESRF from 30th Apr 2004 to 2nd May 2004, including our personal travel and living expenses.

## RESEARCH EXPERIENCE

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- 2011**  
(7 months) INRIA Saclay–Île-de-France.  
Postdoctoral Research Fellow.  
*I joined the AVIZ Team at INRIA Saclay - Île-de-France where I am investigating multi-modal visualization of neuroimaging data (inc. T2 MRI, DTI, fMRI, etc.).*
- 2010-1**  
(14 months) Department of Radiation Oncology, University of California, San Diego (UCSD), CA, USA.  
Postdoctoral Research Fellow.  
*I joined the Center for Advanced Radiotherapy Technologies where I investigate the use of high performance computing in radiotherapy re-planning, particularly physically-based simulation of radiation/matter interactions using GPU programming.*
- 2008-9**  
(13 months) Fondation Digiteo, INRIA Saclay–Île-de-France and CEA Saclay, France.  
Postdoctoral Research Fellow.  
*I was the technical coordinator and the only developer of a technology transfer project called Tomo3D-EA. We are investigating the use of evolutionary algorithms and particle physics modelling in fully-3D tomographic reconstruction for nuclear medicine.*
- 2006-8**  
(25 months) School of Computer Science, Bangor University, UK.  
Research Officer.  
*I was the technical coordinator of this large multi-disciplinary project – Development and validation of a virtual reality simulator for training in interventional radiological visceral needle puncture procedures – involving six UK universities and an industrial partner. The project was awarded 2<sup>nd</sup> place in the EuroGraphics 2009 Medical Prize “for its innovative use of computer graphics in a complex system that is already far advanced towards clinical use” (see <http://www.youtube.com/watch?v=LvHcUIXzfjw> for a YouTube video to learn more about the simulator) and it is now in its pre-commercialisation stage. Within this project, my research was focusing on graphics, haptics and visual simulation.*
- 2003-8**  
(4 years) School of Computer Science, Bangor University, UK.  
PhD student.  
*Development of novel techniques for a virtual reality simulator for training in image-guided needle puncture procedures.*
- 2003**  
(9 months) Laboratory of Nondestructive Testing using Ionizing Radiations (CNDRI), INSA, Lyon, France.  
Researcher student.  
*Modelling the response of an X-ray camera and developing a new method based on X-ray imaging simulations to investigate or predict Information and Communication Technology (ICT) artefacts in micro-tomography.*
- 2002**  
(15 weeks) School of Computing and Mathematics of the University of Teesside, UK.  
Final year project.  
*Developing graphical user interface for a training tool in radiology.*

## MAIN TEACHING EXPERIENCE

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- 2012**  
(1 semester) Bangor University, UK.  
Teaching Information Systems.  
*Introducing 1<sup>st</sup> year students in ICT and Master of Business Administration (MBA) students to the basics of information systems.*
- 2011-2**  
(2 semesters) Bangor University, UK.  
Teaching Introduction to Computer Science.  
*Introducing 1<sup>st</sup> year students in ICT to the fundamental of computer science.*
- 2011** UCSD, CA, USA.

- (2 days) GPU Programming for Medical Physics and Medical Imaging Research.  
*Contributing to the organisation and presentation of a short course about GPU programming. The course is designed to train researchers and Ph.D students in medical physics and/or medical imaging to acquire skills in GPU programming.*
- 2010** UCSD, CA, USA.  
(2 days) GPU Programming for Medical Physics and Medical Imaging Research.  
*Same as above. The course was delivered twice in December 2010.*
- 2009-10** École Française de l'Électronique et de l'Informatique (EFREI), Villejuif, France.  
(1 semester) Teaching Computer Graphics algorithms and programming.  
*Developing new material for OpenGL lessons, tutorials and assignments for 4<sup>th</sup> year students in Computer Science, speciality Images and Virtual Reality.*
- 2008-9** School of Computer Science, Bangor University, UK.  
(1 semester) Teaching computer graphics programming.  
*Organizing OpenGL lessons, tutorials and assignments for 3<sup>rd</sup> year students in Computer Science.*
- 2007-8** School of Computer Science, Bangor University, UK.  
(1 year) Teaching computer graphics programming.  
*Organizing OpenGL and M3G lessons, tutorials and assignments for 3<sup>rd</sup> year students in Computer Science.*
- 2004-6** School of Informatics, University of Wales, Bangor, UK.  
Lab. demonstration in Computer Graphics and Computer Systems for 1<sup>st</sup> year students in Computer Science or Engineering.
- 2004-6** School of Informatics, University of Wales, Bangor, UK.  
Tutorials in Modelling & Analysis for 1<sup>st</sup> year students in Engineering.
- 2004-5** School of Informatics, University of Wales, Bangor, UK.  
Lab. demonstration in Scientific Visualisation for 4<sup>th</sup> year students in Computer Science.
- 2003** CRESPA, Lyon, France.  
(2<sup>nd</sup> semester) Teaching computer graphics.  
*Developing new material for computer graphics lessons, tutorials and assignments for 4<sup>th</sup> year students in Computer Science.*

## CLINICAL TRAINING

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- 2010-1** Department of Radiation Oncology, UCSD, CA, USA.  
*Performed the fluence checks (mostly at the beginning of a patient's treatment).  
Performed the monthly quality assurance (QA) of Linear Accelerators (Varian 21X and Varian Trilogy).*

## PUBLICATIONS

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### Scientific Journals (peer reviewed articles)

1. P. F. Villard, **F. P. Vidal**, L. ap Cenydd, R. Holbrey, S. Pisharody, S. Johnson, A. Bulpitt, N. W. John, F. Bello, and D. Gould. Interventional radiology virtual simulator for liver biopsy. *International Journal of Computer Assisted Radiology and Surgery*, 2013. doi:10.1109/s11548-013-0929-0. To appear
2. **F. P. Vidal**, P.-F. Villard, and É. Lutton. Tuning of patient specific deformable models using an adaptive evolutionary optimization strategy. *IEEE Transactions on Biomedical Engineering*, 59(10):2942–2949, October 2012. doi:10.1109/TBME.2012.2213251
3. P.-F. Villard, **F. P. Vidal**, C. Hunt, F. Bello, N. W. John, S. Johnson, and D. A. Gould. Simulation of percutaneous transhepatic cholangiography training simulator with real-time breathing motion. *International Journal of Computer Assisted Radiology and Surgery*, 4(9):571–578, November 2009. doi:10.1007/s11548-009-0367-1
4. **F. P. Vidal**, N. W. John, D. A. Gould, and A. E. Healey. Simulation of ultrasound guided needle puncture using patient specific data with 3D textures and volume haptics. *Computer Animation and Virtual Worlds*, 19(2):111–127, May 2008. doi:10.1002/cav.217

5. **F. P. Vidal**, F. Bello, K. W. Brodlie, D. A. Gould, N. W. John, R. Phillips, and N. J. Avis. Principles and applications of computer graphics in medicine. *Computer Graphics Forum*, 25(1):113–137, March 2006. doi:10.1111/j.1467-8659.2006.00822.x
6. **F. P. Vidal**, J. M. Létang, G. Peix, and P. Clétens. Investigation of artefact sources in synchrotron microtomography via virtual x-ray imaging. *Nuclear Instruments and Methods in Physics Research B*, 234(3):333–348, June 2005. doi:10.1016/j.nimb.2005.02.003

### Book Chapters

1. D. Gould, F. Bello, N. John, S. Johnson, C. Hunt, H. Woolnough, A. Bulpitt, V. Luboz, D. King, P.-F. Villard, S. Pisharody, **F. Vidal**, and A. Sinha. *Innovative Cardiovascular Procedures*, chapter Simulator development in vascular and visceral interventions, pages 11–28. Edizione Minerva Medica, Turin, Italy, 2009. ISBN 88-7711-637-7

### International Conferences (peer reviewed articles)

1. **F. P. Vidal**, Y. L. Pavia, J.-M. Rocchisani, J. Louchet, and É. Lutton. Artificial evolution strategy for pet reconstruction. In *International Conference on Medical Imaging Using Bio-Inspired and Soft Computing (MIBISOC2013)*, pages 39–46, Brussels, Belgium, May 2013
2. **F. P. Vidal**, P.-F. Villard, and É. Lutton. Automatic tuning of respiratory model for patient-based simulation. In *International Conference on Medical Imaging Using Bio-Inspired and Soft Computing (MIBISOC2013)*, pages 225–231, Brussels, Belgium, May 2013
3. N. W. John, M. Jones, R. Martin, **F. P. Vidal**, and R. Zwigelaar. The research institute of visual computing, RIVIC. In J. C. Torres and A. Lécuyer, editors, *Eurographics 2013 Lab Presentation*, Girona, Spain, May 2013. Eurographics Association. doi:10.2312/conf/EG2013/lab/L08
4. P.-F. Villard, **F. P. Vidal**, F. Bello, and N. W. John. A method to compute respiration parameters for patient-based simulators. In *Proceeding of Medicine Meets Virtual Reality 19 - NextMed (MMVR19)*, volume 173 of *Studies in Health Technology and Informatics*, pages 529–533, Newport Beach, California, February 2012. IOS Press. Winner of the best poster award
5. **F. P. Vidal**, É. Lutton, J. Louchet, and J.-M. Rocchisani. Threshold selection, mitosis and dual mutation in cooperative coevolution: application to medical 3D tomography. In *International Conference on Parallel Problem Solving From Nature (PPSN'10)*, volume 6238 of *Lecture Notes in Computer Science*, pages 414–423, Krakow, Poland, September 2010. Springer, Heidelberg. doi:10.1007/978-3-642-15844-5\_42
6. **F. P. Vidal**, M. Garnier, N. Freud, J. M. Létang, and N. W. John. Accelerated deterministic simulation of x-ray attenuation using graphics hardware. In *Eurographics 2010 - Poster*, page Poster 5011, Norrköping, Sweden, May 2010. Eurographics Association
7. **F. P. Vidal**, J. Louchet, J.-M. Rocchisani, and É. Lutton. New genetic operators in the Fly algorithm: application to medical PET image reconstruction. In *Applications of Evolutionary Computation*, volume 6024 of *Lecture Notes in Computer Science*, pages 292–301, Istanbul, Turkey, April 2010. Springer, Heidelberg. doi:10.1007/978-3-642-12239-2\_30. Nominated for best paper award
8. **F. P. Vidal**, D. Lazaro-Ponthus, S. Legoupil, J. Louchet, É. Lutton, and J.-M. Rocchisani. Artificial evolution for 3D PET reconstruction. In *Proceedings of the 9th international conference on Artificial Evolution (EA'09)*, volume 5975 of *Lecture Notes in Computer Science*, pages 37–48, Strasbourg, France, October 2009. Springer, Heidelberg. doi:10.1007/978-3-642-14156-0\_4
9. F. Bello, A. Bulpitt, D. A. Gould, R. Holbrey, C. Hunt, N. W. John, S. Johnson, R. Phillips, A. Sinha, **F. P. Vidal**, P.-F. Villard, and H. Woolnough. ImaGiNe-S: Imaging guided needle simulation. In *Eurographics 2009 - Medical Prize*, pages 5–8, Munich, Germany, March 2009. Eurographics Association. Second prize and winner of €300
10. **F. P. Vidal**, P.-F. Villard, R. Holbrey, N. W. John, F. Bello, A. Bulpitt, and D. A. Gould. Developing an immersive ultrasound guided needle puncture simulator. In *Proceeding of Medicine Meets Virtual Reality 17 (MMVR17)*, volume 142 of *Studies in Health Technology and Informatics*, pages 398–400, Long Beach, California, January 2009. IOS Press
11. L. ap Cynydd, N. W. John, **F. P. Vidal**, D. A. Gould, E. Joekes, and P. Littler. Cost effective ultrasound imaging training mentor for use in developing countries. In *Proceeding of Medicine Meets Virtual Reality 17 (MMVR17)*, volume 142 of *Studies in Health Technology and Informatics*, pages 49–54, Long Beach, California, January 2009. IOS Press

12. N. W. John, V. Luboz, F. Bello, C. Hughes, **F. P. Vidal**, I. S. Lim, T. V. How, J. Zhai, S. Johnson, N. Chalmers, K. Brodlie, A. Bulpitt, Y. Song, D. O. Kessel, R. Phillips, J. W. Ward, S. Pisharody, Y. Zhang, C. M. Crawshaw, and D. A. Gould. Physics-based virtual environment for training core skills in vascular interventional radiological procedures. In *Proceeding of Medicine Meets Virtual Reality 16 (MMVR16)*, volume 132 of *Studies in Health Technology and Informatics*, pages 195–197, Long Beach, California, January 2008. IOS Press
13. **F. P. Vidal**, N. W. John, and R.M. Guillemot. Interactive physically-based X-ray simulation: CPU or GPU? In *Proceeding of Medicine Meets Virtual Reality 15 (MMVR15)*, volume 125 of *Studies in Health Technology and Informatics*, pages 479–481, Long Beach, California, February 2007. IOS Press
14. **F. P. Vidal**, N. Chalmers, D. A. Gould, A. E. Healey, and N. W. John. Developing a needle guidance virtual environment with patient specific data and force feedback. In *Proceeding of the 19th International Congress of Computer Assisted Radiology and Surgery (CARS'05)*, volume 1281 of *International Congress Series*, pages 418–423, Berlin, Germany, June 2005. Elsevier. doi:10.1016/j.ics.2005.03.200
15. **F. P. Vidal**, F. Bello, K. Brodlie, R. Phillips, N. W. John, D. Gould, and N. Avis. Principles and applications of medical virtual environments. In Christophe Schlick and Werner Purgathofer, editors, *State-of-the-art Proceedings of Eurographics 2004*, pages 1–35, Grenoble, France, August 2004. Eurographics Association

#### International Conferences (invited oral presentation)

1. **F. P. Vidal**. Developing a virtual environment for training in visceral interventional radiology. In *Workshop on Open Source Haptics & Applications, EuroHaptics 2008 (EH 2008)*, Madrid, Spain, February 2008. Invited talk

#### International Conferences (abstracts)

1. **F. P. Vidal**, M. Folkerts, N. Freud, and S. Jiang. GPU accelerated DRR computation with scatter. *Medical Physics*, 38(6): 3455–3456, July 2011. doi:10.1118/1.3611828
2. **F. P. Vidal**, J. Louchet, J.-M. Rocchisani, and É. Lutton. Flies for PET: An artificial evolution strategy for image reconstruction in nuclear medicine. *Medical Physics*, 37(6):3139, July 2010. doi:10.1118/1.3468200
3. **F. P. Vidal**, P. F. Villard, M. Garnier, N. Freud, J. M. Létang, N. W. John, and F. Bello. Joint simulation of transmission x-ray imaging on GPU and patient's respiration on CPU. *Medical Physics*, 37(6):3129, July 2010. doi:10.1118/1.3468154
4. A. Sinha, K. Flood, D. Kessel, S. Johnson, C. Hunt, H. Woolnough, **F. P. Vidal**, P.-F. Villard, R. Holbray, C. M. Crawshaw, A. Bulpitt, N. W. John, F. Bello, R. Phillips, and D. A. Gould. The role of simulation in medical training and assessment. In *Radiological Society of North America 2009 (RSNA 2009)*, Chicago, Illinois, November 2009
5. P.-F. Villard, **F. P. Vidal**, C. Hunt, F. Bello, N. W. John, S. Johnson, and D. A. Gould. Percutaneous transhepatic cholangiography training simulator with real-time breathing motion. In *Proceeding of the 23rd International Congress of Computer Assisted Radiology and Surgery*, volume 4 (Suppl 1) of *International Journal of Computer Assisted Radiology and Surgery*, pages S66–S67, Berlin, Germany, June 2009. Springer. doi:10.1007/s11548-009-0326-x

#### International Conferences (other presentations)

1. F. Bello, T. R. Coles, D. A. Gould, C. J. Hughes, N. W. John, **F. P. Vidal**, and S. Watt. The need to touch medical virtual environments? In *IEEE Virtual Reality 2010 (VR2010), Workshop on Medical Virtual Environments*, Waltham, Massachusetts, March 2010. IEEE Computer Society. URL <http://www.hpv.cs.bangor.ac.uk/vr10-med/Papers/Bello-TheNeedToTouchMedicalVE.pdf>. Available online at <http://www.hpv.cs.bangor.ac.uk/vr10-med/>
2. **F. P. Vidal**, J. Louchet, É. Lutton, and J.-M. Rocchisani. PET reconstruction using a cooperative coevolution strategy in LOR space. In *IEEE Nuclear Science Symposium Conference Record*, pages 3363–3366, Orlando, Florida, October 2009. IEEE. doi:10.1109/NSSMIC.2009.5401758
3. N. W. John, C. Hughes, S. Pop, **F. P. Vidal**, and O. Buckley. Computational requirements of the virtual patient. In *Proceedings of the First International Conference on Computational and Mathematical Biomedical Engineering (CMBE 2009)*, pages 140–143, Swansea, UK, June 2009

4. D. A. Gould, **F. P. Vidal**, C. Hughes, P. F. Villard, V. Luboz, N. W. John, F. Bello, A. Bulpitt, V. Gough, and D. O. Kessel. Interventional radiology core skills simulation: mid term status of the CRaIVE projects. In *Cardiovascular and Interventional Radiological Society of Europe 2008 (CIRCE 2008)*, Electronic Poster, page P 130, Copenhagen, Denmark, September 2008
5. **F. P. Vidal**, A. E. Healey, N. W. John, and D. A. Gould. Force penetration of chiba needles for haptic rendering in ultrasound guided needle puncture training simulator. In *MICCAI 2008 – Workshop on Needle Steering: Recent Results and Future Opportunities*, New York, September 2008. URL <http://lcsr.jhu.edu/NeedleSteering/Workshop/Vidal.html>. Available at <http://lcsr.jhu.edu/NeedleSteering/Workshop/Vidal.html>
6. G. Debouzy, **F. Vidal**, D. Deprez, S. Keswani, J. Warren, and P. Cosson. Virtual radiographic environment. In *Eurographics 2003 Medical Prize*, Granada, Spain, September 2003

### National Conferences

1. **F. P. Vidal**, M. Garnier, N. Freud, J. M. Létang, and N. W. John. Simulation of X-ray attenuation on the GPU. In *Proceedings of Theory and Practice of Computer Graphics 2009*, pages 25–32, Cardiff, UK, June 2009. Eurographics Association. doi:10.2312/LocalChapterEvents/TPCG/TPCG09/025-032. Winner of Ken Brodli Prize for Best Paper
2. A. Sinha, S. Johnson, C. Hunt, H. Woolnough, **F. P. Vidal**, and D. Gould. Preliminary face and content validation of Imagine-S: the CIRSE & BSIR experience. In *Proceedings of the UK Radiological Congress*, page 2, Manchester, UK, June 2009
3. P. F. Villard, P. Littler, V. Gough, **F. P. Vidal**, C. Hughes, N. W. John, V. Luboz, F. Bello, Y. Song, R. Holbrey, A. Bulpitt, D. Mullan, N. Chalmers, D. Kessel, and D. Gould. Improving the modeling of medical imaging data for simulation. In *Proceedings of the UK Radiological Congress*, page 61, Birmingham, UK, June 2008
4. P. Cosson, J. Yu Cheng, S. Keswani, G. Debouzy, D. Deprez, and **F. Vidal**. Virtual radiographic environments become a reality. In *Proceedings of the UK Radiological Congress*, Manchester, UK, June 2004
5. P. Cosson, G. Debouzy, D. Deprez, **F. Vidal**, S. Keswani, and J. Warren. Virtual radiographic environments: what use would they be? In *University of Teesside Annual Learning & Teaching Conference*, Middlesbrough, UK, January 2004
6. P. Cosson, G. Debouzy, D. Deprez, **F. Vidal**, S. Keswani, and J. Warren. Virtual radiographic environments. In *University of Teesside Annual Learning & Teaching Conference*, Middlesbrough, UK, 2003

### PhD thesis

1. **F. P. Vidal**. *Simulation of image guided needle puncture: contribution to real-time ultrasound and fluoroscopic rendering, and volume haptic rendering*. PhD thesis, School of Computer Science, Bangor University, UK, January 2008

### Master dissertations

1. **F. P. Vidal**. Modelling the response of x-ray detectors and removing artefacts in 3D tomography. Master's thesis, École doctorale Électronique, Électrotechnique, Automatique, INSA de Lyon, France, September 2003
2. **F. P. Vidal**. Constructing a GUI using 3D reconstruction for a radiographer's training tool. Master's thesis, School of Computing and Mathematics, University of Teesside, UK, September 2002

### Undergraduate dissertations

1. **F. Vidal**. Programming an user interface for the commercial video game *Frank Herbert's DUNE*. IUT Reims-Châlons-Charleville, University of Reims, France, 2001. Diplôme d'Université Ingénierie de l'Image (Undergraduate Thesis)
2. **F. Vidal**. Adding an estimate of quantities and costs module, and a bill module to a database application in ms-access. IUT A, University Claude Bernard Lyon 1, France, 2000. Diplôme Universitaire de Technologie, spécialité informatique, option génie informatique (Undergraduate Thesis)

### PROFESSIONAL ACTIVITIES

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- 2013** Chair of the session on Texture at the Computational Visual Media Conference.  
Reviewer for PLOS ONE (journal).  
Reviewer for Computer Graphics Forum (journal).  
Reviewer for Theory and Practice of Computer Graphics (TPCG) (national conference).  
Reviewer for IEEE Transactions on Information Technology in BioMedicine (journal).  
Reviewer for High Dynamic Range Imaging (HDRI) conference (international conference).  
Reviewer for International Journal of Computer Assisted Radiology and Surgery (journal).  
Reviewer for Mathematical Problems in Engineering (journal).  
Member of the EuroGraphics Association
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- 2012** Reviewer for IET Computer Vision (journal).  
Reviewer for Computer Graphics Forum (journal).  
Chair of the session on Diffusion MRI at the 16<sup>th</sup> Conference on Medical Image Understanding and Analysis.  
Reviewer for IEEE Transactions on Medical Imaging (journal).  
Reviewer for TPCG (national conference).  
Invited at the Postgraduate Certificate in Higher Education (PGCertHE) Programme Board (Bangor University).  
Scientific committee member of the IADIS Multi Conference on Computer Science and Information Systems (international conference).  
Reviewer for ACM SIGGRAPH (international conference).  
Reviewer for IEEE Transactions on Biomedical Engineering (journal).  
Member of the EuroGraphics Association
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- 2011** Reviewer for Computer Graphics Forum (journal).  
Reviewer for Computational and Mathematical Methods in Medicine (journal).  
Reviewer for IEEE Transactions on Information Technology in BioMedicine (journal).  
Reviewer for Computer Graphics International (CGI) (CGI) (international conference).  
Member of the EuroGraphics Association
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- 2010** Member of the American Association of Physicists in Medicine  
Member of the EuroGraphics Association
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- 2009** Scientific and technical consulting for NDRC - National Digital Research Centre, Dublin, Ireland.  
*At the launch of the "Haystack Project", I was invited in Dublin to share my experience about the development of medical virtual environments and haptics applications for ultrasound guided needle puncture training simulators.*  
  
Member of the EuroGraphics Association
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- 2008** Member of the EuroHaptics Association
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- 2000-2** Freelance programmer for Inobat and Sapitec, Décines, France.  
(3 seasons) *Improving databases applications in MS-Access.*

## RELATED PROFESSIONAL EXPERIENCE

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- 2001** Widescreen Games, Lyon, France.  
(14 weeks) Work placement in computer graphics programming.  
*Contributing to the implementation of a commercial video game, in particular when a player has to type a code to open doors.*
- 2000** Inobat and Sapitec, Vaulx-en-Velin, France.  
(10 weeks) Work placement in computer science.  
*Improving databases applications in MS-Access.*

## SUPERVISION OF STUDENT PROJECTS

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1. 2012-3: D. Thomas (4<sup>th</sup> year at Bangor University, UK): Visual analytics for environmental data
2. 2013: J. Lavauzelle (4<sup>th</sup> year at ENSTA (ENSTA), France): Voxelisation of point cloud data in PET reconstruction
3. 2013: A. Dutertre (4<sup>th</sup> year at ENSTA, France) : Patient-specific respiration simulation and deformation of soft tissues
4. 2012-3: C. Parkinson (3<sup>rd</sup> year at Bangor University, UK): Segmentation of Medical Images
5. 2012-3: L. Williams (3<sup>rd</sup> year at Bangor University, UK): Hillsafe mobile application

6. 2012-3: D. Llyod (3<sup>rd</sup> year at Bangor University, UK): Comp-U-Teach: Serious Gaming and Website Creation
7. 2012-3: P. Birchall (3<sup>rd</sup> year at Bangor University, UK): Creating An Educational Experience With Online Technologies
8. 2011-2: T. Gardner (4<sup>th</sup> year at Bangor University, UK): Registration, Segmentation and Visualisation of 3D B-Mode Ultrasound and 3D Power Doppler Ultrasound (final year project).
9. 2011-2: R. Campbell (4<sup>th</sup> year at Bangor University, UK): Analysis of medical data (final year project).
10. 2011-2: N. Williams (3<sup>rd</sup> year at Bangor University, UK): The Occasional Cinema's Website (final year project).
11. 2011-2: A. Gould (3<sup>rd</sup> year at Bangor University, UK): Social Network for Crowd Sourcing Food (final year project).
12. 2011-2: M. Buckley (3<sup>rd</sup> year at Bangor University, UK): Mobile Climbing Guide for iPhone (final year project).
13. 2011-2: J. Thomas (3<sup>rd</sup> year at Bangor University, UK): Website development in HTML5 (final year project).
14. 2010: B. Ronflette (4<sup>th</sup> year at INSA, Rennes, France): Computer vision for automatic patient motion detection (3 months).
15. 2009: Q. Gautier (4<sup>th</sup> year at INSA, Rennes, France): Image segmentation & registration for PET reconstruction (3 months).
16. 2008: L. Glondu (4<sup>th</sup> year at INSA, Rennes, France): Semi-automatic estimation of cell movements using graphics processor units (3 months).
17. 2008: M. Jessett (4<sup>th</sup> year at Bangor University, UK): Simulation of nerve stimulation for an immersive virtual environment for training nerve block (final year project).
18. 2007-8: S. Hayot (3<sup>rd</sup> year at Bangor University, UK): Developing an immersive virtual environment for training nerve block (final year project).
19. 2007: M. Garnier (3<sup>rd</sup> year at INSA, Rennes, France): Physically-based simulation of x-ray on the GPU (2 months).
20. 2006: R. Guillemot (3<sup>rd</sup> year at University of Reims, France): Implementing a ray-casting algorithm on the GPU to simulate X-ray imaging (3 months).
21. 2005: F. Griffon (4<sup>th</sup> year at INSA, Lyon, France): Implementing a ray-casting algorithm to simulate X-ray imaging for a virtual environment (VE) in interventional radiology (1 month).
22. 2005: A. Schildknecht (2<sup>nd</sup> year at University of Reims, France): Game development using the ARToolkit library (10 weeks).
23. 2005: A. Pia (2<sup>nd</sup> year at University of Reims, France): Constructing a graphical user interface (GUI) for a VE in interventional radiology training (10 weeks).



## FOREIGN LANGUAGES

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Fluent **English** (lived more than 6 years in UK, lived more than one year in California), basic **German**, basic **Spanish**, basic **Dutch** (lived 8 months in the Netherlands).

## VOLUNTEERING

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- Rock climbing leader at UCSD Outback Adventures [2010].
- Discussion leader at UCSD International Center to help students going to study in France or in UK [Summer 2010].
- Group leader [2004-7] at the Bangor University Mountain Walking Club (UMWC), the largest student club at Bangor University.
- First aider [2005-7] at UMWC.
- UMWC committee member as secretary [2005-6].
- UMWC webmaster [2005-6].
- UMWC committee member as gear officer [2004-5].
- Musician in marching bands (playing clarion and natural trumpet during folk-festivals) [1995-6, 1999-2001].

## OUTSIDE INTERESTS

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Rock climbing – Mountain walking – First aider – Attended an official one week mountain leader (ML) training in North Wales (Nov/Dec 2005) – Shotokan karate – Painting – Natural trumpet – Guitar.