PAUL MOREL

PhD Candidate in Computer Science applied to Radiation-Therapy
Master's degree in Electronics, Telecommunications, Computer Science

Education

2011-Present: **Laboratoire d'Informatique Gaspard Monge – Université Paris-Est Marne-La-Vallée - France**
Sept11-Aug14 **PhD Candidate – Co-supervised and in collaboration with the University of Iowa - USA**
Graduation expected November 2014

Development of a proton-therapy simulator (programming languages Python and C) to model patients moving during the delivery of a treatment in order to assess the robustness of treatment plans. Study of compensation strategies aiming at reducing the impact of motion for such treatments. Study of algorithmic problems raised by multi-layer Multileaf Collimators (MLC) and rotating MLCs in radiotherapy.

2009-2010: **University Of Calgary - Canada – Electrical and Computer Engineering**
Exchange program during the last year of engineering school

Medical Image Processing, Biomedical Imaging and Applications, Medical Imaging Techniques, Image Analysis and Computer Vision, Computer Graphics.

2004-2010: **Ecole Supérieure de Chimie Physique Electronique de Lyon (CPE-Lyon), Lyon, France**
Master of Sciences - Electronics, Telecommunications, Computer Science Department

Engineering school on a 5-year program plus a 1-year internship:
Mathematics, Physics, Chemistry, Engineering Sciences, Electronics, Telecommunications, Computer Science, Image and Signal Processing, Image Synthesis, and Optimization Techniques.

Work Experiences

2011-2013: **Teaching Assistant**
Sept11-Oct13

156 hours of teaching to 1st year of graduate studies at Université Paris-Est MLV and engineering schools (ESIPE – Ecole Supérieure d'Ingénieurs de l'Université Paris-Est Marne La Vallée, ESIEE - Ecole Supérieure d'Ingénieurs en Electronique et Electrotechnique, IMAC - Image Multimédia Audiovisuel Communication): algorithmic, discrete structures, Python, C and Java.

2010-2011: **Imaging Informatics – University of Calgary - Canada**
12 Months **Full-time employment**
May10-Apr11

Project with Calgary Scientific Inc. to develop a "Virtual Biopsy" technique for tumors based on texture analysis from data extracted from the Stockwell transform: work on the rotational invariance, data mining to find criteria caracterizing different textures, automatisation of the Stockwell transform calculation and improvement of the graphical user interface. Implementation of a de-noising filter on the graphic card (GPU) using Core Image. Development of a tool for intensity normalization.

2010-2011: **Imaging Informatics – University of Calgary – Canada**
7 Months **Part-time employment**
Oct09-Apr10

Development of tools for software dedicated to medical imaging in Objective-C.

2008-2009: **CASILab** (Computer-Assisted Surgery and Imaging Laboratory) - **University of North Carolina - USA**
12 Months **One-Year Internship**
Aug08-Aug09

Development of a software to delineate brain margins in MRA (Magnetic Resonance Angiography) images of mice head either automatically or semiautomatically for brain tumors study. Comparison to manual segmentations and to ITKSNAP.

Programming and Linguistic Skills

Programming: Python, Objective-C, C++, C, Java, Matlab

French: Native **English:** Bilingual (TOEIC 2014 965/990) **Spanish:** Good **German:** Basic

Extracurricular Experiences

2006-2008: **French Red-Cross** **First-aid worker:** PSE1: 1st level of Emergency Team Rescue Certificate
In charge of the organisation of rescue workers training program
FIPS: First Aid Initiation Trainer
Team Work, Safety, Decision Making, Planning, Teaching

2006-2008: **Youth Camps Management - Treasurer -** 30 participants between 12 and 17 years old
Team Work, Responsibilities, Budget, Safety, Planning

Sports: Running, Hiking, Climbing, Ice Hockey

Trips: USA, Canada, Mexico, Nepal, Spain, England, Croatia, Slovenia, Morocco

Articles, Abstracts and Posters

- Guillaume Blin, **Paul Morel**, Romeo Rizzi, Stéphane Vialette
  Towards unlocking the full potential of Multileaf Collimators
  In proceeding: 40th International Conference on Current Trends in Theory and Practice of Computer Science (SOFSEM), Jan 2014, High Tatras, Slovakia. Lecture Notes in Computer Science

- Jurek Smolen MSc, Helen O'Grady MSc, Jingde Du PhD, Hing Cheng BSc, **Paul Morel MSc**, Lino Ramirez PhD, Colin Holmes PhD, Audrey Spielman MD, Ross Mitchell PhD, and Lindsay Machan MD
  Texture Analysis Improves Accuracy of Computer Assisted Differentiation Between Small Hepatic Cysts and Hepatocellular Carcinoma On Non-contrast CT
  Abstract for the RSNA 2011 conference, Chicago IL, USA.

- **Paul Morel MSc**, Neda Changizi MSc, Hing Cheng BSc, Ross Mitchell PhD
  Texture characterization of tumors
  Poster at the "Care About Cancer" conference 2011, Edmonton AB, Canada.

- **Paul Morel**, Mark Van Horn, Francois Budin, Terry Van Dyke, Weili Lin, Elizabeth Bullitt
  Brain Stripping Magnetic Resonance Angiographic lmages of Tumor-Bearing Mice
  Poster at the « Radiology - BRIC Symposium 2009 » , University of North-Carolina, Chapel Hill NC, USA.