Quentin Gautier

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Education

UC San Diego, CA *Sept 2013 – now*

- PhD student in Computer Science with Prof. Ryan Kastner
- Working on hardware acceleration of real-time 3D reconstruction
- Project mentor in the "Engineers for Exploration" group

INSA Rennes (France) *2005 – 2010*

- Master's degree in Computer Science

University of Montreal (Canada) *2009 – 2010*

- 2 quarters as an exchange student

Professional Experience

Machine Learning Graduate Intern *June – Sept 2015*
Intel Corporation

- Evaluated possible acceleration of algorithms on Intel architecture
- Areas include Machine Learning and Computer Vision

Software developer *Dec 2010 – Aug 2013*
Center for Advanced Radiotherapy Technologies, UC San Diego

- Developed a software research platform to improve patient's cancer treatment
- Created a GUI using C++ with Qt on top of efficient GPU-based algorithms
- Collaborated with researchers from various backgrounds (physics, medical physics, mathematics)
- Worked on a prototype of GPU-based web application using Python

Internship for research in 3D graphics *May – Sept 2010*
SOGITEC, Bruz (France) – wholly-owned subsidiary by Dassault Aviation

- Developed an efficient algorithm to create and display a realistic cloud layer in real time
- Extended the algorithm to the display of 3D volumetric clouds

Internship for research in image processing *Jul – Aug 2009*
INRIA, Orsay (France) - French Institute for Research in Computer Science and Automation

- Developed an algorithm to analyze and segment 3D medical images in C++
- Created a real-time 3D interface to test and visualize results using OpenGL

Software development for roof measurements *Jul – Aug 2009*
Sold to 3iPlus (France)

- Developed a GUI in C++ with Qt to simplify calculations of roof measures for solar panels
- Defined specifications with the client, along with conception, realization and testing of the software

Languages

French: Native; **English**: fluent; **German**: basic

Computer skills

Languages:

- Proficient in: C/C++, Cuda, OpenCL
- Familiar with: Python, Java, OpenGL, GLSL, Haskell, HTML, XML, PHP, Perl, Javascript, MySQL
- FPGA high-level synthesis: Intel FPGA OpenCL SDK and Xilinx Vivado HLS C/C++

Other skills:

- Platforms: Windows and Linux
- Software conception models: UML**,** Design Patterns
- Software engineering and project management

Publications

Spector: An OpenCL FPGA Benchmark Suite, Quentin Gautier, Alric Althoff, Pingfan Meng, and Ryan Kastner *International Conference on Field-Programmable Technology (FPT), December 2016*

Adaptive Threshold Non-Pareto Elimination: Re-thinking Machine Learning for System Level Design Space Exploration on FPGAs, Pingfan Meng, Alric Althoff, Quentin Gautier, and Ryan Kastner, *Design Automation and Test in Europe (DATE), March 2016*

Real-time 3D Reconstruction for FPGAs: A Case Study for Evaluating the Performance, Area, and Programmability Trade-offs of the Altera OpenCL SDK, Quentin Gautier, Alexandria Shearer, Janarbek Matai, Dustin Richmond, Pingfan Meng, and Ryan Kastner, *International Conference on Field-Programmable Technology (FPT), December 2014*

Talks and posters:

Development of a GPU Research Platform for Automatic Treatment Planning and Adaptive Radiotherapy Re-Planning, Gautier Q, Tian Z, Graves Y, Li N, Zarepisheh M, Sutterley C, Shi F, Cervino L, Jia X and Jiang S, *Medical Physics, 40, 534-534 (2013)*

A GPU-Based Re-Planning System for Online Adaptive Radiotherapy, Gautier Q, Gu X, Men C, Jia X, Uribe-Sanchez A, Choi D, Majumdar A and Jiang S, *Medical Physics, 38, 3676-3676 (2011)*

Teaching Experience

Lectures: Introduction to CUDA, Introduction to Intel FPGA OpenCL SDK
TA: Intro to parallel computation, Intro to FPGA High-Level Synthesis, Intro to Robotics

Hobbies and interests

Photography, Filmmaking, Theater (Comedian in a company of amateur theater at INSA Rennes), **3D Animation** (3dsMax, Maya), **Music** (guitar), **Hiking**