

# Anthony Barbier

39 Whitehill Road,  
CB5 8LU, Cambridge, UK  
**07517 210508**  
**Anthony.Barbier@gmail.com**

While I've been focusing mostly on low level parallel high performance programming recently, I am a very versatile engineer who enjoys all kind of programming from web scripting to assembly. I am always keen to learn new things, and am not afraid of challenges.

## EXPERIENCE

### **Arm, Cambridge (UK) — Arm Compute Library team leader and lead architect (Team of ~10 engineers).**

2016 - PRESENT

The Arm Compute Library is a collection of highly optimised routines for all Arm IPs for traditional Computer Vision and Machine Learning. (C++11 / multi-threaded NEON / OpenCL).

- Lead architect and gatekeeper: originally designed the library from scratch, now review & merge contributions from other engineers.
- Team leader: interface between management, marketing and engineering. Help managing the roadmap and the requirements. Maintain Jira and distribute tasks to engineers.
- Farm of devices and continuous integration: maintain farm of development boards and consumer devices, write and maintain scripts to automatically run pre-commit/ nightly workloads in Jenkins. (Groovy / Python / bash).
- Customer support: Direct support to Arm customers, support lambda developers on Github.
- Line Manager: Manage the career and development of some of the engineers in the team.

### **Arm, Cambridge (UK) — OpenCL Ecosystem Engineer**

2012 - 2016

OpenCL evangelisation:

- Created proof of concept demos for various use cases: Camera denoise, JPEG encoder, video encode (Motion estimation), traditional computer vision.
- Created teaching materials: tutorials, examples and presentations about how to profile / optimise code for Arm GPUs.
- Provided on-site and remote support for tier-1 customers & partners: troubleshooting, profiling, optimising, training.

## SKILLS

C++11, Python, OpenCL, NEON

Software design, Continuous integration (Jenkins)

Git, Gerrit, Github, SVN.

Used to work with consumer devices and pre-silicon platforms (FPGA, models, etc.)

Some experience of Java, C#, perl, bash, Cuda, HTML / PHP / Javascript / SQL, Direct X / OpenGL.

Hard worker, fast learner, dynamic & proactive

## LANGUAGES

English: fluent, French: native

## LINKS

LinkedIn profile:  
<https://www.linkedin.com/in/anthony-barbier-4b092a5/>

Arm Compute Library project:  
<https://github.com/arm-software/ComputeLibrary>

University portfolio:  
<http://tony.misterjones.org/>

## **Arm, Cambridge (UK) — Khronos representative**

2012 - 2018

Represented Arm in Khronos (Mostly OpenVX, NNEF and Camera working groups). Attended weekly conference calls and quarterly face to face meetings.

## **Arm, Cambridge (UK) — Acting BSP Team Leader**

2014

For a while I was acting BSP team leader: I was leading the team in charge of building and distributing builds of the Mali GPU driver to the public.

The team was also in charge of creating internal BSP images for the development boards used by the Arm engineers.

## **Arm, Cambridge (UK) — GPU Driver engineer**

2010 - 2012

Worked on various parts of the Mali Midgard DDK (Memory manager, debug, instrumentation, utilities, EGL layer). Language: mostly C99.

## **EDUCATION**

### **Teesside University, Middlesbrough — BSc Visualisation Final year (1st class)**

Sept 2009 - May 2010

- Modules taken: Real Time Graphics, Advanced Image Synthesis, Procedural Visual Effects, Procedural Animation, Final Year Project
- Development of DrIVE, an API to visualise in 3D drilling data. Project developed in C++ using OpenGL/GLSL/boost for the multi threading. Realised in partnership with the Drilling department of Schlumberger Cambridge Research.
- Development of a real time graphics demonstration using Direct 3D and HLSL.
- Development of a multi threaded Ray Tracer in C++.
- Development of a Maya plug-in to do cloth simulation. (OpenGL version too)
- Development of small applications to procedurally render visual effects (C++/ OpenGL/ Boost multi threading)

### **Schlumberger Cambridge Research, Cambridge — 14 months internship**

July 2008 - August 2009

- Tested nVidia CUDA and OpenCL technologies applied to Geophysics (Moment tensor computations, Signal cross correlation).

- Development of a new Virtual Reality demonstration for the iCenter on Windows platform using only Open Source libraries (C++/C++CLI/C#).
- Development in C# of a 3D probe plug-in for Petrel (Schlumberger geophysics visualisation software) to provide an additional interactive display of various data.
- Project leader on the development of Digital Signage displays (Omnivex) in different centres of the company.(Perl / batch)
- Crestron (touch panels) programming.
- Conference Room / IT maintenance.

## **Teesside University, Middlesbrough — BSc Visualisation 2nd year**

Sept 2007 - May 2008

- Modules taken: Rendering, Principles of Computer Graphics, Visual Simulation, Games Software Development 1 & 2, Tools Programming for Games.

- Creation of a level editor in C++ using win32API and GDI for the 2D game created the year before (see below)
- Creation of an offline rendering engine (second part of the renderer started last year), it support reflection (using cube maps), bi-linear patches rasterization, shadow maps, multi-sampling, supersampling, cell shading, primitives clipping.
- Creation of a 3D demo using Direct 3D, win32/ Direct3D initialization, XBox 360 controller support, collision detection, terrain following, skybox, spherical and FPS cameras, AI, lighting.
- Creation of a visual simulation of a theme park ride, using OpenGL and the tutor's scene graph.
- Creation of a 2D platform game for a games software module using an API given by the tutor. I did a Metal Slug-like game with some characters from different worlds (Mario, One piece, etc...)

Realisation of a 3D scene renderer just using a simple Scene Graph API and OpenGL. This program is able to render different kind of scenes exported from Maya or 3DS Max.(Perspective transform, Model view transform, Lambert and Phong reflection models, point light, spot light, attenuation, procedural shapes, parametric surfaces, Bezier curves, explicit meshes)

## **IUT A, Lyon 1 — DUT Informatique (Computer Science degree)**

Sept 2005 - June 2007

Algorithmic , C, C++, Analysis, JAVA, UML, SQL, Oracle/PLSQL, Maths (non continuous maths, linear algebra and geometry, analysis, probability and statistics, graphs and automated systems), HTML / PHP / Javascript.