

Nathan Gauër

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Computer Science Research Student
6 month internship starting in january 2019

WORK EXPERIENCE

- 01/2017 - Now **Student researcher - System & Graphics** - France
Worked in my school laboratory on several subjects. Including a multi-threaded ray-tracer (**KD-Tree + photon-mapping**) (**Go**), a bi-directional path-tracer (**C**), and a 32bit kernel with segmentation and PCI support (**C, assembly**)
- 05/2018 - 08/2018 **Google Summer of Code with QEMU: Vulkan-ize VirGL**
Guests running in QEMU can use Virgl3D to run an **OpenGL** application on the host. However, **Vulkan** support is missing. My mission is to add a partial support for this API. This includes **contributing to MESA & Virglrenderer**. (ongoing)
- 01/2018 - 07/2018 **Teacher at EPITA - Kernel development** - France
Bachelor class students. Taught how to develop a 32bit kernel, with segmentation, userland and VGA/ISO support (**C, assembly**).
- 09/2017 - 01/2018 **Software engineer intern at Photospace** - France
Achieved a real time video processing pipeline for a military grade submarine. Written in **C++** and using **Cuda**, this pipeline had to process and record up to 4 video streams (4K, HD, SD)
- 05/2017 - 08/2017 **Google Summer of Code with QEMU: VirtIO-GPU driver for Windows**
Developed an **OpenGL** PoC **driver** for a Windows guest running on **QEMU**. This included an userland state-tracker, and a **kernel driver** to talk to the para-virtualized device. As a result, a sample OpenGL application could run on the guest.
- 06/2016 - 08/2016 **Intern at Trimaran** - France
Delivered a real-time 3D viewer for the Vendée-Globe race (sailing). Running in **Unity**, and featuring dynamic ocean, weather, and buoyancy. This module was successfully integrated to the main application, and convinced the company to move from Ogre3D to Unity.

PERSONAL PROJECTS

- 2018 **Path-tracer** with **KD-Tree** and photon-mapping
- 2018 CAN bus reversing on a Toyota Yaris
- 2017 my_ld.so: rewriting Linux's dynamic linker (no lazy-binding)
- 2016 Unity plugin to simulate buoyancy on any object (also including demo ocean)
- 2015 **Multiplayer game** (FPS and RTS) - (Unity, C#)
- 2014 MIPS processor emulator
- 2010 Simple **2D Game engine** (SDL, C++)

EDUCATION

- 2014 - now MS in Computer Engineering at EPITA - France
- 2015 BAFA (youth worker qualification)
- 2014 Baccalauréat - sciences (equivalent to A levels)

LANGUAGES

- French - native
- English - full professional proficiency (Toeic 990)
- Spanish - basic

HOBBIES & VOLONTEERING

- Scout (16 years) - head of unit for 11-24 years old children since 2014
- Volunteer (2 years) - The Salvation Army (2013-2015)
- Cycling (non competitive)