

**Internship Title:**

Ray tracing for 3D Graphics rendering on mobile GPU systems

About Huawei Nice Research Center:

HUAWEI is a leading global provider of information and communications technology (ICT), driving Innovation & Consumer Experiences in Smart Device, Infrastructure, and network solutions.

Huawei Nice Research Center is located in the Sophia Antipolis Technology Park (10 minutes from Cannes, France). Among other missions, the team in Sophia Antipolis innovates in the field of 3D graphics rendering systems for gaming use cases on high-end smartphones.

Internship Summary:

Gaming desktops and consoles use ray tracing algorithms for their 3D Graphics titles. They rely on premium Graphics Processing Unit (GPU) architecture for creating photo-realistic 3D Graphics. The internship goals are to:

- Survey existing 3D Graphics ray tracing algorithms. Estimate and rank their complexity for mobile systems. Select the most suitable one for implementation.
- Create a performance evaluation framework and analyze resulting performance in terms of visual quality and complexity of mobile system processing.
- Identify bottlenecks and propose improvements to the selected algorithm.

Internship Duration:

6 months.

Position Qualifications:

- Last year Master degree student in Electronics/Computer Science.
- Written and spoken English.
- Programming skills in C, C++ and Python.
- Knowledge in 3D Graphics and GPU programming.
- Familiarity with 3D Graphics programming APIs is a plus.

Application procedure:

To apply for this position, please email your application in English to Karim Djafarian (karim.djafarian@huawei.com).

Key Words:

GPU, 3D graphics, Ray Tracing, Vulkan, DirectX, OpenCL, CUDA