Apple GPU Software Overview

Apple's GPU Software team provides the graphics software foundation across all of Apple's innovative products, including iPhone, iPad, Apple TV, Mac, and Apple Watch. Our responsibilities encompass the developer APIs, developer tools, and device drivers for the GPU and Display on all of Apple's hardware.

This team released Metal 2 on macOS High Serra and iOS 11 which provides low level access to the graphics processing unit (GPU), enabling you to maximize the graphics and compute potential of apps on iOS, macOS, and tvOS. Metal 2 added support for numerous new graphics and compute features, machine learning inference, and VR rendering. For macOS Mojave and iOS 12, the GPU software team extended Metal 2. Metal applications can now leverage the unique features of Apple's custom A11 GPU, providing substantial reductions in memory bandwidth and improved performance. Metal 2 now adds support for GPU-driven command encoding, allowing scenes to be constructed with little to no CPU interaction. In addition, Metal 2 adds new ray-intersection primitives, allowing you to take full advantage of the parallelism offered by the GPU. Also newly supported this year is full GPU shader debugging, hardware-accelerated training of machine learning models, and hot-pluggable external graphics hardware to allow you to easily add extra performance to your Mac.

Areas you can work in

- Rendering Compute API development
- AR/VR
- GPU Driver Development
- Display Driver Development & Display Port Interface
- Power Management
- Embedded Firmware Development
- Developer Tools
- Performance Engineering
- Continuous Integration/Build & Release
- External Developer Enabling

Skills

- Software Engineering (Algorithms, optimization, data structures)
- Advanced graphics rendering techniques
- Computer Architecture
- Operating systems and device drivers
- Embedded systems and parallel processing
- 3D Graphics and game technologies
- Metal or other graphics/compute APIs
- LLVM/clang, compiler development
- C/C++ programming
- Machine Learning

Relevant Classes


Education

Must be currently enrolled in BS/MS/PhD program in Computer Science, Software Engineering, Electrical Engineering or related fields. To be eligible for an internship, you must also return to school after the internship to continue education or an internship must be required for graduation from your school.

To apply for internship or full-time opportunities, please submit your resume to cmuniversity@apple.com

Apple is an Equal Employment Opportunity Employer that is committed to inclusion and diversity. We also take affirmative action to offer employment and advancement opportunities to all applicants, including minorities, women, protected veterans, and individuals with disabilities.