FIRMWARE ENGINEER (CO-OP 12 months)

WHAT YOU DO AT AMD CHANGES EVERYTHING
We care deeply about transforming lives with AMD technology to enrich our industry, our communities, and the world. Our mission is to build great products that accelerate next-generation computing experiences – the building blocks for the data center, artificial intelligence, PCs, gaming and embedded. Underpinning our mission is the AMD culture. We push the limits of innovation to solve the world's most important challenges. We strive for execution excellence while being direct, humble, collaborative, and inclusive of diverse perspectives.
AMD together we advance_

Location: Markham, ON 1 Commerce Valley Dr E, Thornhill, ON L3T 7X6

Hybrid: *This is a hybrid role (remote & in-office) as the hiring team will require the student to come to the Markham office approximately 2-3 days a week.*

Program Term: This role is a 12-month position from May 6, 2024 – April 25, 2025

About the Department

RLC Firmware Engineering - is responsible for the firmware that controls the Graphics hardware power/clock management, state save and restore, and virtualization.

The Role

In this Co-op role, you will be supporting the development and maintenance of AMD firmware for an embedded processor being used in our very latest graphics products. The RLC firmware is responsible for the management of multiple clock/power domains. RLC firmware also handles the secure loading of microcode for the graphics subsystem, and the task switching for virtualization. This work will involve supporting and authoring of both C and assembly level code for new firmware features, targeted performance optimizations, tools, and resolution of issues that occur throughout the lifecycle of the products as needed. As part of the firmware team working at the heart of AMD's graphics and compute IP, you will get to work with other firmware development teams, architects, test teams, and customers.

K**ey Responsibilities:**

- Work with team members in the support, design, development, and delivery of RLC FW for AMD's discrete and embedded graphics products.
- Support and deliver complete and clear documentation for all software produced.
- Debug issues at the boundary of FW and HW.
- Work on both internal and external platforms.
- Work on a system simulator as part of pre-silicon efforts.

- Waveform level analysis to root cause FW/HW issues.
- Development of custom tools using C/C++ to aid in day-to-day work as needed.

What you'll learn

- All aspects of AMD Graphics architecture and the firmware that supports that Graphics.
- How AMD Graphics operates both stand alone (dGPU) and in combination with a CPU (APU).

The Person:

Our ideal Co-op candidate will possess strong communication and collaboration skills. They will be adept at debugging complex software/hardware systems and have demonstrable understanding and/or experience programming in C/C++ and assembly language. Graphics IP/SOC experience and/or understanding of the graphics command pipeline is an asset. The individual should possess a high level of integrity, be motivated, be capable of effectively working with persons in other countries and be able to efficiently lead sophisticated situations.

Preferred Experience:

- Experience with BIOS, firmware, or system software development.
- Skillful at C language; knowledge of assembly.
- Architectural Understanding and/or Experience of graphics/compute pipelines.
- Understanding and/or Experience working at API/UMD/KMD/FW levels.
- Understanding and/or Experience with BIOS related tools' development is a plus.
- Understanding and/or Experience with Perforce, JIRA, Git, or similar tools.
- Understanding and/or Experience with Linux development environments.
- Understanding and/or Experience with system wide debugging from SW to FW to HW.
- Familiarity with VHDL/Verilog and general HW design concepts and process.
- Familiarity with at least one BIOS code base (AMI, Insyde or Phoenix BIOS) preferred.
- Team player able to manage multiple assignments will minimal supervision.
- Critical thinking and ability to apply problem-solving to real-world challenges.

Academic Credentials:

3rd year students pursuing a bachelor's degree in Computer Science, Computer Engineering, Software Engineering, Electrical Engineering, or a related field/discipline