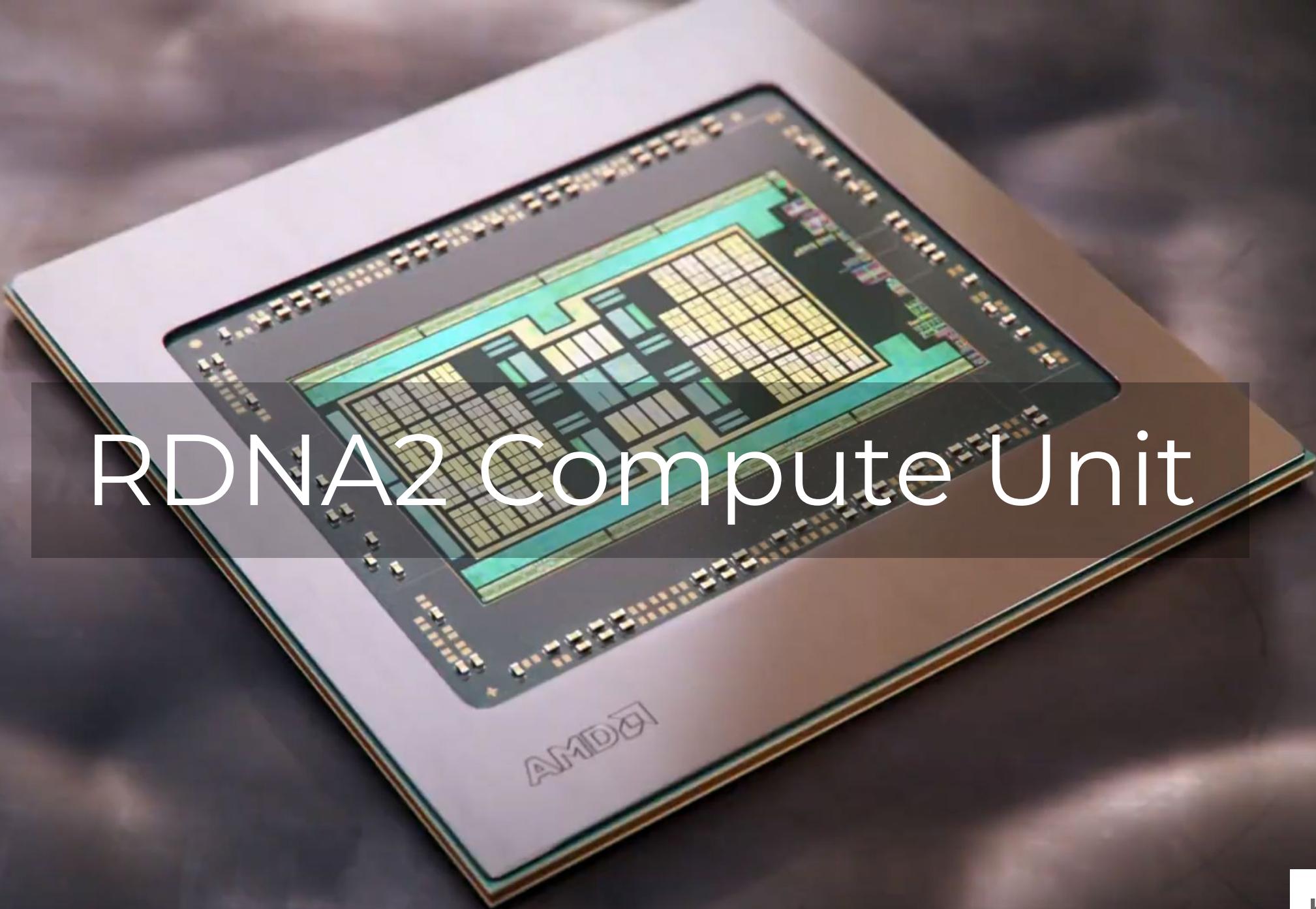


# RDNA2 Compute Unit

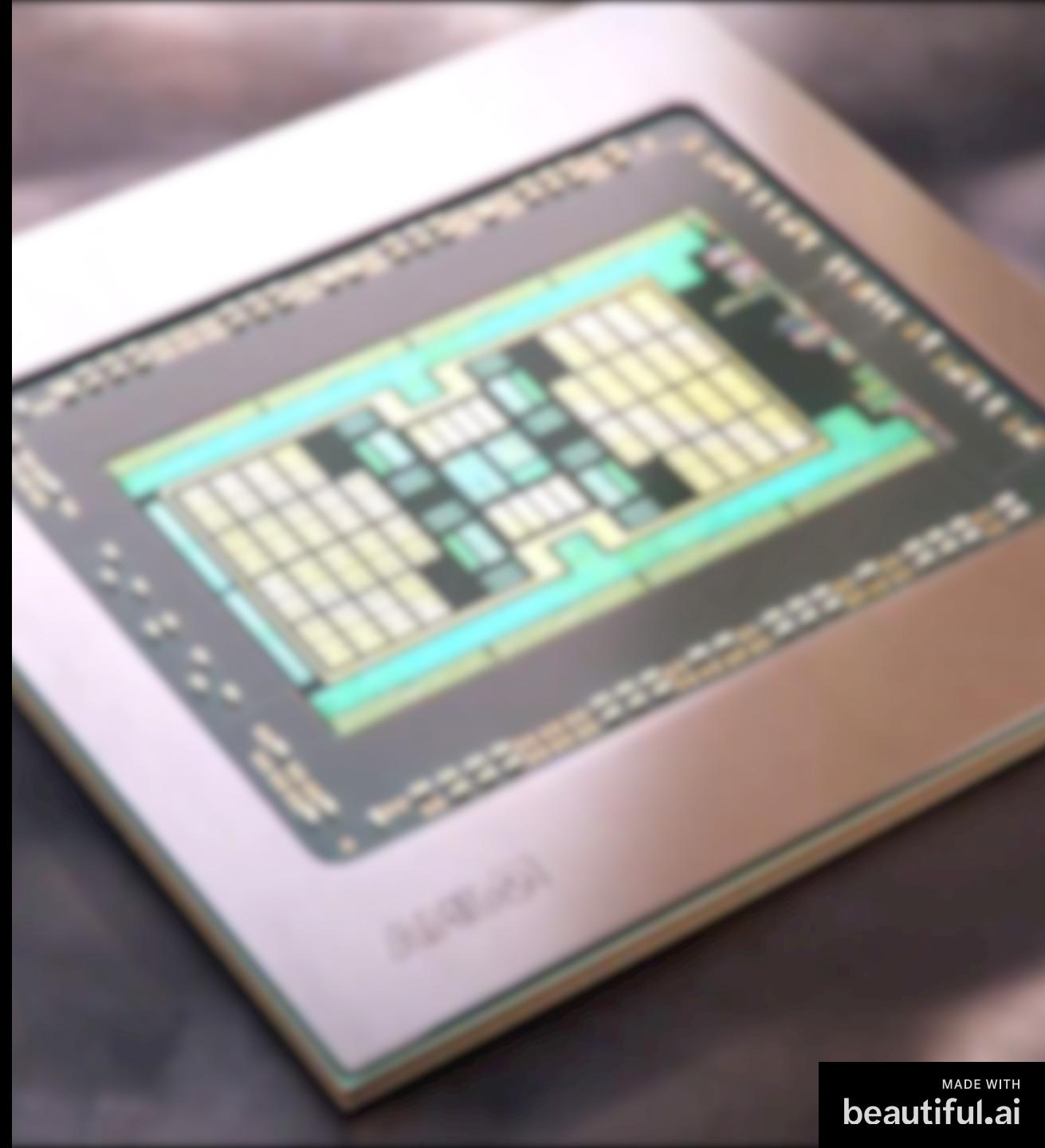


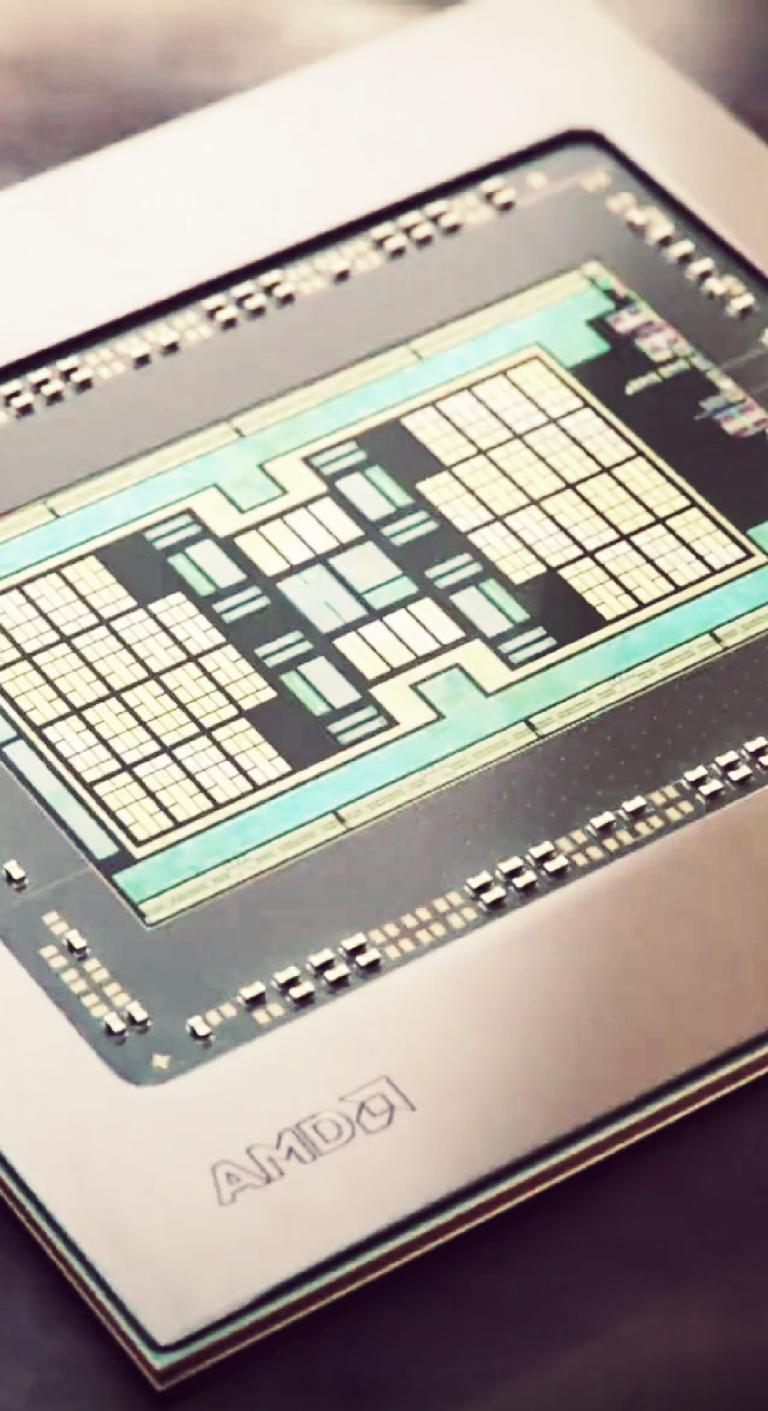
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# RDNA2 Compute Unit

Kruti Deepan Panda, Rahul  
Magesh, Anirudh T



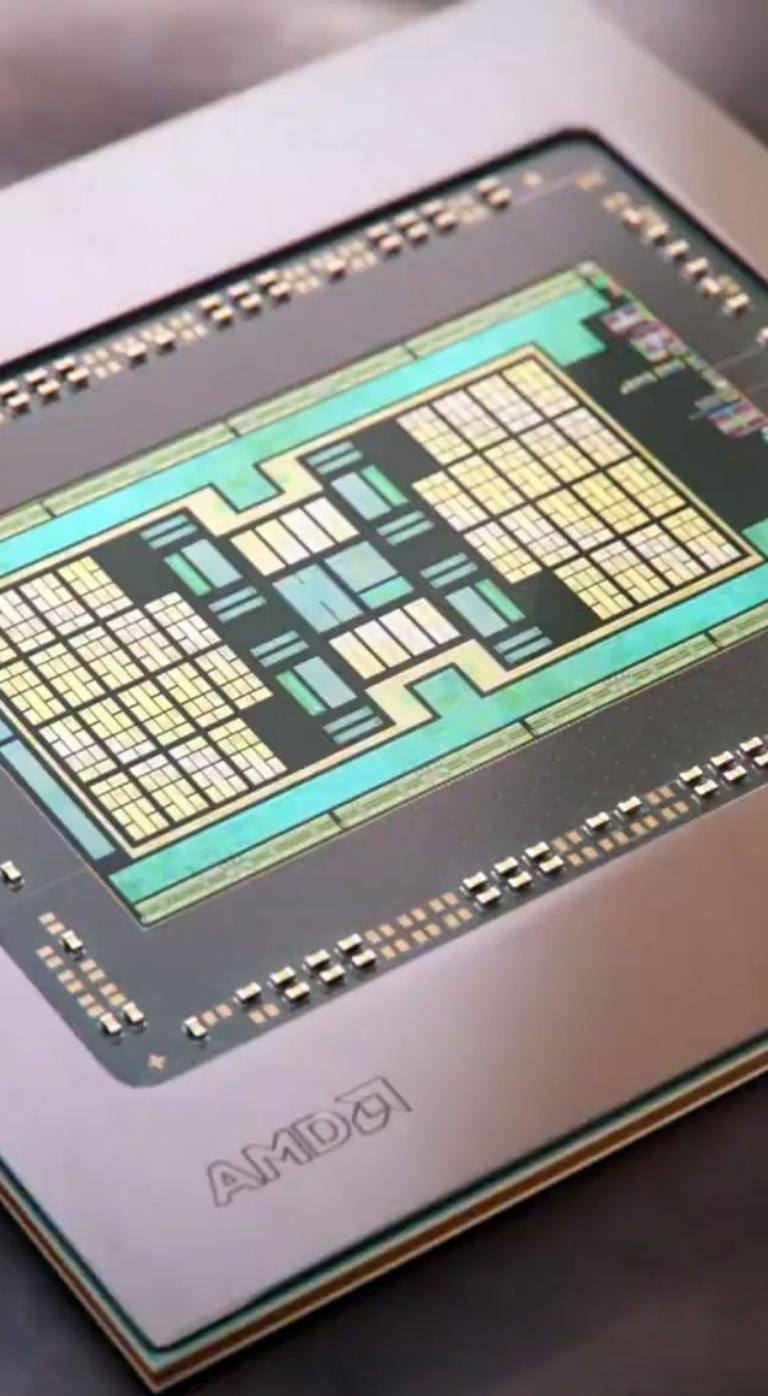


# What is RDNA2 ?

RDNA 2 (also RDNA2) is the successor to the RDNA microarchitecture by AMD.

RDNA (Radeon DNA) is the codename for a GPU microarchitecture and accompanying instruction set architecture developed by AMD.

The first product lineup featuring RDNA was the Radeon RX 5000 series of video cards, launched on July 7, 2019.



# About the project

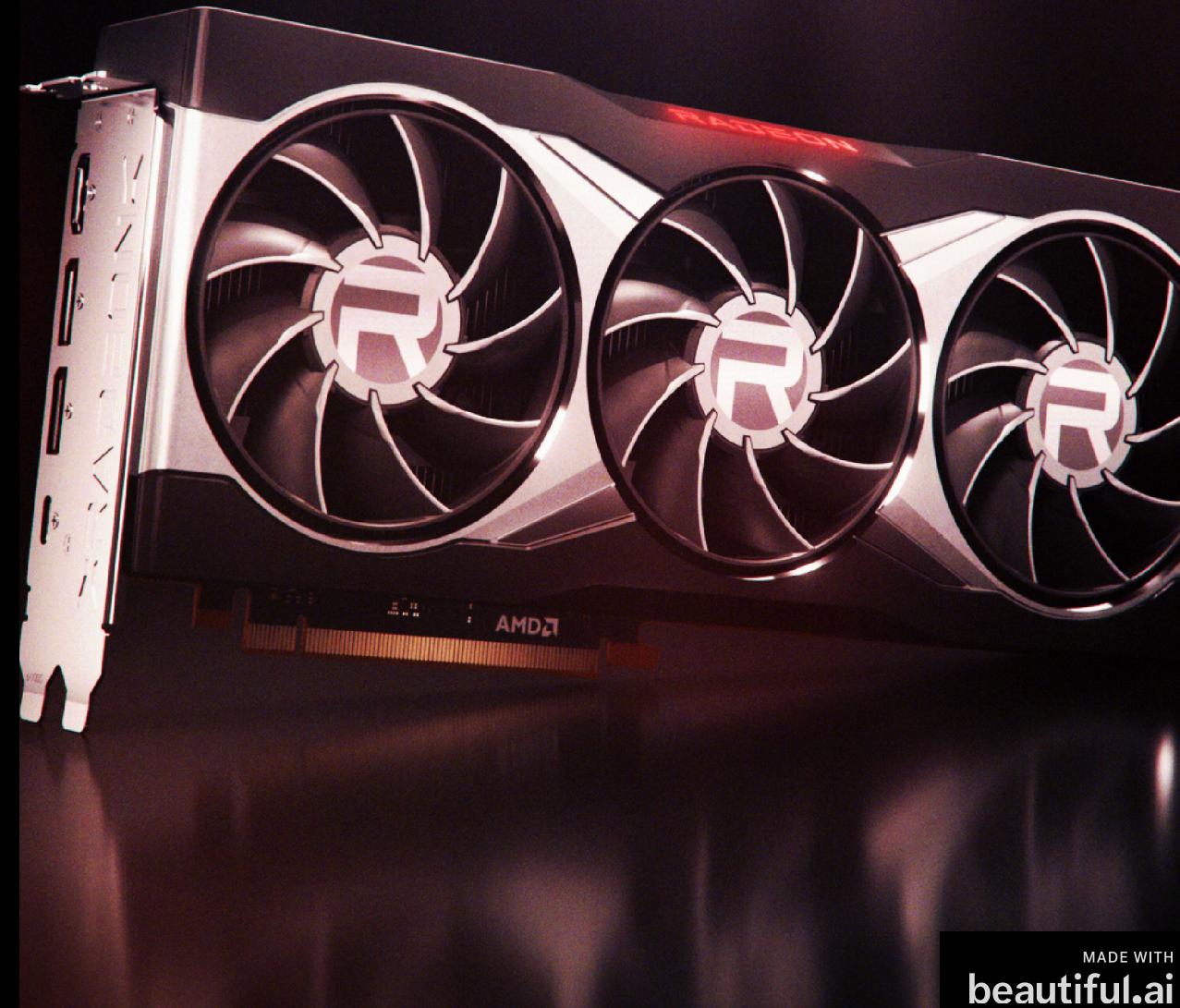
**This project aims to design a 'compute unit' based on the RDNA2 ISA for AMD GPUs.**

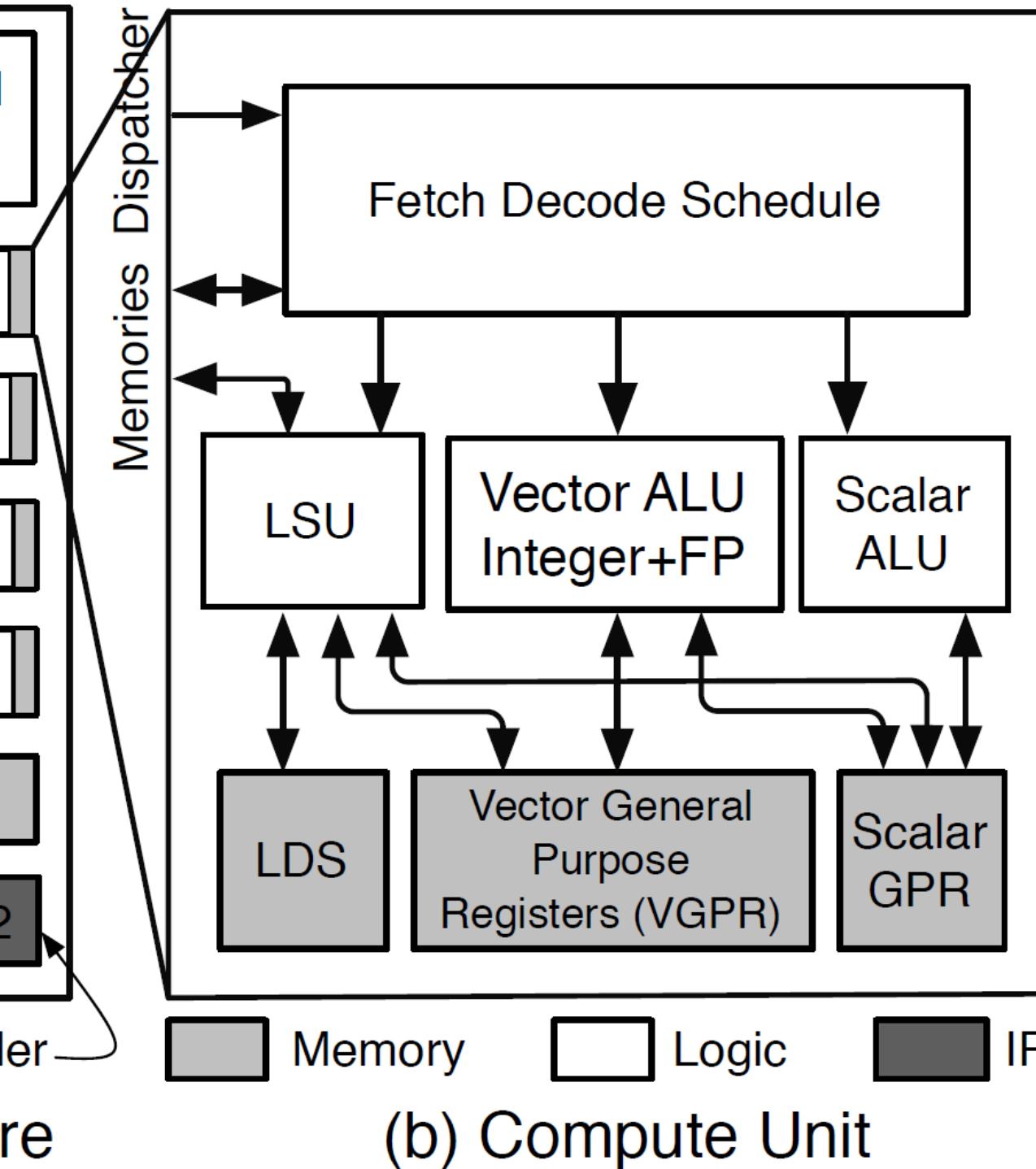
**Currently, there are no open-source hardware implementations based on the latest RDNA2 ISA.**

**Having a simple hardware model for reference can enable parallel programmers to work on RDNA2 based GPUs more efficiently.**

**The compute unit shall comprise of a vector ALU and a scalar ALU, fully featured with all the instructions documented by AMD.**

# Role of **Mentees**





## Implementing the Scalar Unit

Since this is a big undertaking the work shall be divided between both mentors and mentees. The mentees shall work on the scalar ALU and mentors shall work on the vector ALU.

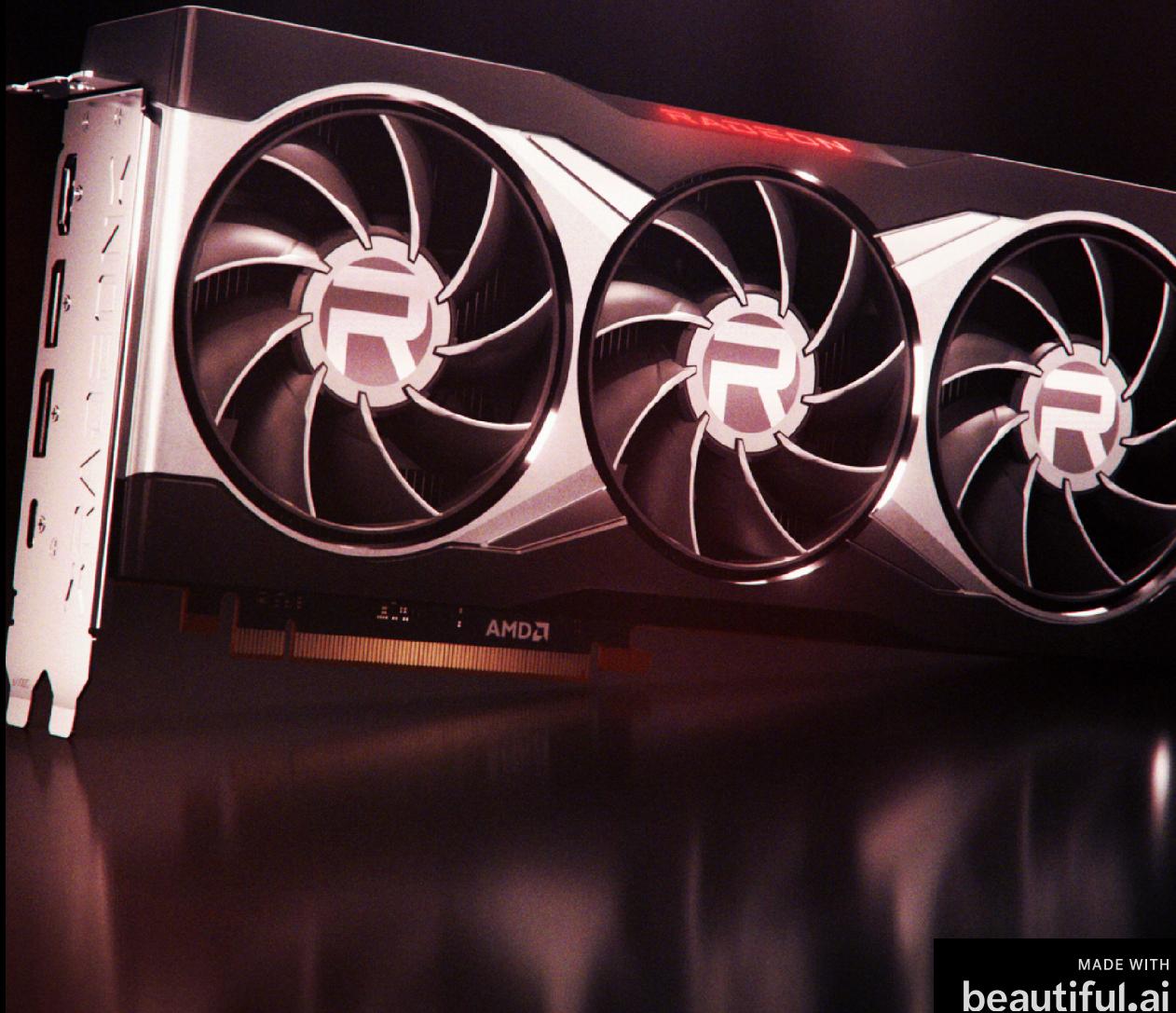
## Helping with documentation

Both the mentors and the mentees shall be actively involved in documenting their work. This will help make this project a worthwhile endeavour

## Setting up the test bench

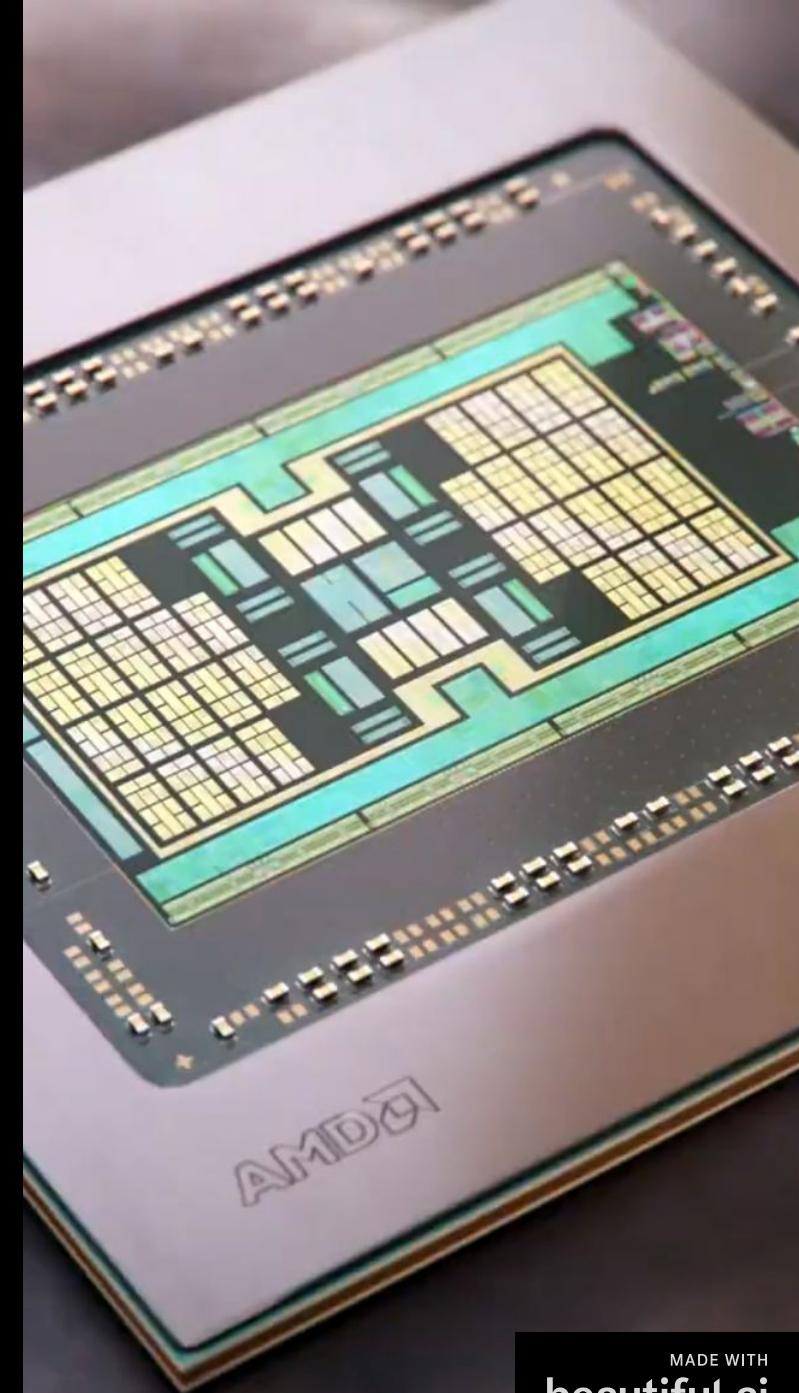
Every design needs to be tested to ensure proper functioning of each modules.

Mentees  
will **Gain**



# An excellent experience

- 1 Computer Architecture Skills
- 2 Strong Digital Concepts
- 3 Experience with Verilog
- 4 Experience with digital design
- 5 Experience with digital verification





# NO PREREQUISITES

The mentors shall guide you for what ever is necessary to work with this project