EE/CprE/SE 491 WEEKLY REPORT 8

10/31/2024-11/7/2024

Group number: sdmay25-19

Project title: ReRAM AI Accelerator

Client &/Advisor: Dr. Henry Duwe and Dr. Cheng Wang

Team Members/Role: Noah Mack, Olivia Price, Sam Burns, Travis Jakl

- **Weekly Summary**

  This week we worked on getting the inverter tutorial done while designing two new architectures for the chips. Travis also was working on testing the former team's devices and seeing if they were working for their intended purpose. For designing the two new chips, we looked at the former team's work and are trying to implement different variations of theirs while also putting our innovations into the design. Thus research of the other team's designs was combed through this week.

- **Past week accomplishments**

  • Sam Burns: Worked through some of the errors I was facing on the top level LVS of the digital harness for my inverter project. I also made a document comparing the architectures of each past ReRAM team. Noah and I also started thinking about our own architecture.

  • Travis Jakl: Created a file to record testbenching results for modules, notifying the functionality of each module and if any issues arise. Also testbenched all of the present premade testbench files

  • Olivia Price: I got to the layout of the inverter tutorial after some struggles. Also started combing through the two previous team's design documents in order to understand their architecture so we can build off of them.

  • Noah Mack: Got my top level inverter design through LVS, working on precheck and getting some strange errors with the precheck process itself.

- **Pending issues**

  • Sam Burns: Unsure of how to fix with remaining LVS issues, think it could be a possible naming issue.

  • Olivia Price: I need more time in college

  • Noah Mack: Precheck broken, need to ask Gregory about how to potentially fix

- **Individual contributions**

NAME	**Individual Contributions** *(Quick list of contributions. This should be short.)*	**Hours this week**	**HOURS cumulative**
Sam Burns	Worked through some of the LVS issues Created a document comparing past teams architectures Noah and I are now thinking about our own architecture design	6	58
Travis Jakl	Created a testbench document notifying the functionality of each module and if any issues arise. Also testbenched all of the present premade testbench files	6	53
Olivia Price	Almost finished the inverter tutorial and started researching the previous team's design to start creating one of our own.	6	58
Noah Mack	Kept working on my top level inverter, got through LVS successfully	6	59

- **Plans for the upcoming week**

  • Sam Burns: Work out LVS issues, come up with solid plan for architecture made with Noah, start testing past teams components

  • Travis Jakl: Create some testbenches of my own, as well as look into the missing files

for the couple testbenches that have some.

• Olivia Price: Hopefully, get the inverter tutorial done. Also, dive into the team's design more and get a rock-solid understanding of what we want to do with our architectures. Also, help Travis debug some of the previous team's components.

• Noah Mack: Get precheck working and get inverter fully through precheck. Then work on testing the previous team's components.

- **Summary of weekly advisor meeting**

This week, during the advising meeting, we did not really talk about much. We talked about the issues that we are having with the previous team's components and that there is a drop of power in their bit line. Otherwise, we though to conclude it after a very short amount of time because Dr. Duwe had deadlines he needed to meet, and so did we.