ECE284 FA25 Progress Report

1. Group Name:

Attention Seekers

2. Group Member's Names (separated by commas):

Aastha Shah, Ali Alabiad, Mohamed Ibrahim, Nathan Chao, Soham Karkhanis, Venkateshwaran Sivaramakrishnan

3. Make a GitHub repo and add all your team members.
4. Add the teaching staff (Make sure we have access to your repo if it is not public)
   a. shantanu-exe
   b. maria-s8
   c. supermingu
5. Add the GitHub repo link here:

https://github.com/AZA-2003/Attention-Seekers/tree/main

6. Please commit/push your code by the end of your team's poster presentation day.
   a. This is not what will be used to grade your final report. This is just to make sure you completed what you mentioned in the poster.
7. Your GitHub repo should have the following folders. Avoid adding vcd to GitHub. Add it to your gitignore. If you can add a README doc to GitHub, it would be nice (though not necessary).
   a. Part-1
      i. Add all the files here
   b. Part-2
      i. Add all the files here
   c. Part-3
      i. Add all the files here
   d. Poster
      i. Add PDF of your poster here
   e. Alpha
      i. Alpha 1
      ii. Alpha 2
      iii. Alpha 3
      iv. More folders if you want

8. Fill the table below (Update the table as needed):

Item	Current Status	Note
Part1	Done https://github.com/AZA-2003/Attention-Seekers/tree/main/baseline	
Part2	Done https://github.com/AZA-2003/Attention-Seekers/tree/main/part_2	
Part3	Done https://github.com/AZA-2003/Attention-Seekers/tree/main/part_3	
Alpha 1 - Weight Stationary Controller	Done https://github.com/AZA-2003/Attention-Seekers/tree/main/hardware	
Alpha 2 - Enhanced Verification	Done https://github.com/AZA-2003/Attention-Seekers/tree/main/hardware	
Alpha 3 -PCIe Integration	Done https://github.com/AZA-2003/Attention-Seekers/tree/main/pcie_alpha	
Alpha 4 - Clock and Data Gating	Done https://github.com/AZA-2003/Attention-Seekers/tree/main/gating	Data gating work is in /gating. Clock gating has been directly implemented as a part of the controller in /hardware.
Alpha 5 - Runlength Encoding Decoder Module	Work In Progress https://github.com/AZA-2003/Attention-Seekers/tree/skdecoder/decoder	We are working on the FSM; we still need to integrate it at the top level between the SRAM and Input FIFO.
Alpha 6 - Latency Reduction Techniques	1) Optimizing FIFO lengths - Done 2) Filtering useful PSUM entries - WIP 3) Modified FIFO loading - Done	Implemented in the testbench of the baseline version itself.
Alpha 7 - ResNet Hardware Implementation	Work In Progress	
Software Alpha 1 - Hybrid Scheduler	Done https://github.com/AZA-2003/Attention-Seekers/tree/main/software	README.md in the directory explains all files and related alphas
Software Alpha 2 - 4-2bit Model Compression	Done https://github.com/AZA-2003/Attention-Seekers/tree/main/software	README.md in the directory explains all files and related alphas
Software Alpha 3 - Orchid Optimizer using	Done https://github.com/AZA-2003/Attention-Seeke	README.md in the directory explains all files and related alphas

Orthogonalization	rs/tree/main/software	
Software Alpha 4 - Mixed Pruning	Done https://github.com/AZA-2003/Attention-Seekers/tree/main/software	README.md in the directory explains all files and related alphas
Software Alpha 5 - Quantization using Rotation Matrices	Done https://github.com/AZA-2003/Attention-Seekers/tree/main/software	README.md in the directory explains all files and related alphas