2025 Chipathon
Post Mortem Review

IEEE Solid-State Circuits Society

Technical Committee on the Open Source Ecosystem (TC-OSE)

November 20th, 2025

SSCS

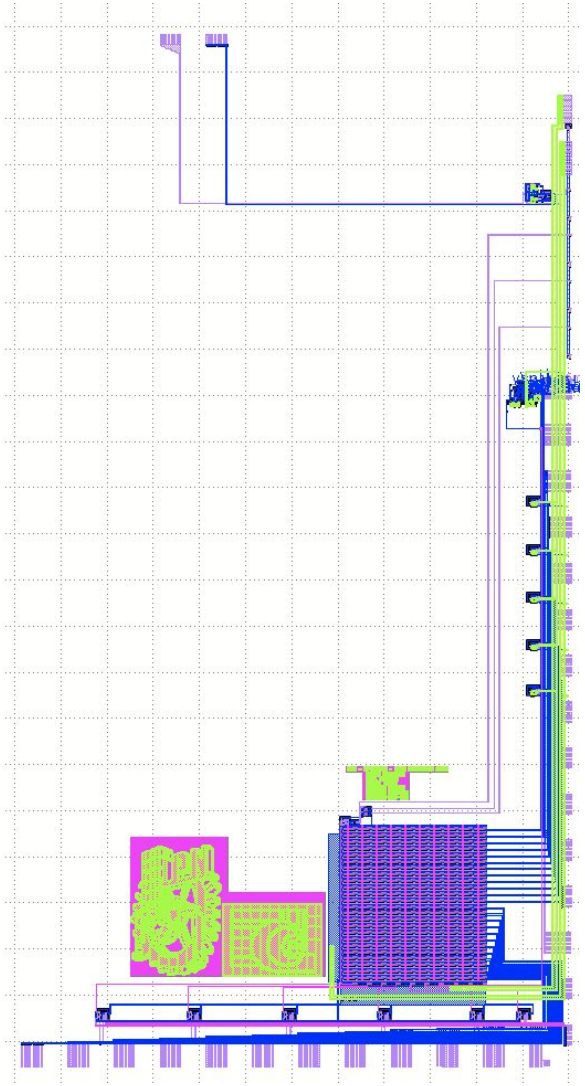
IEEE
Advancing Technology for Humanity

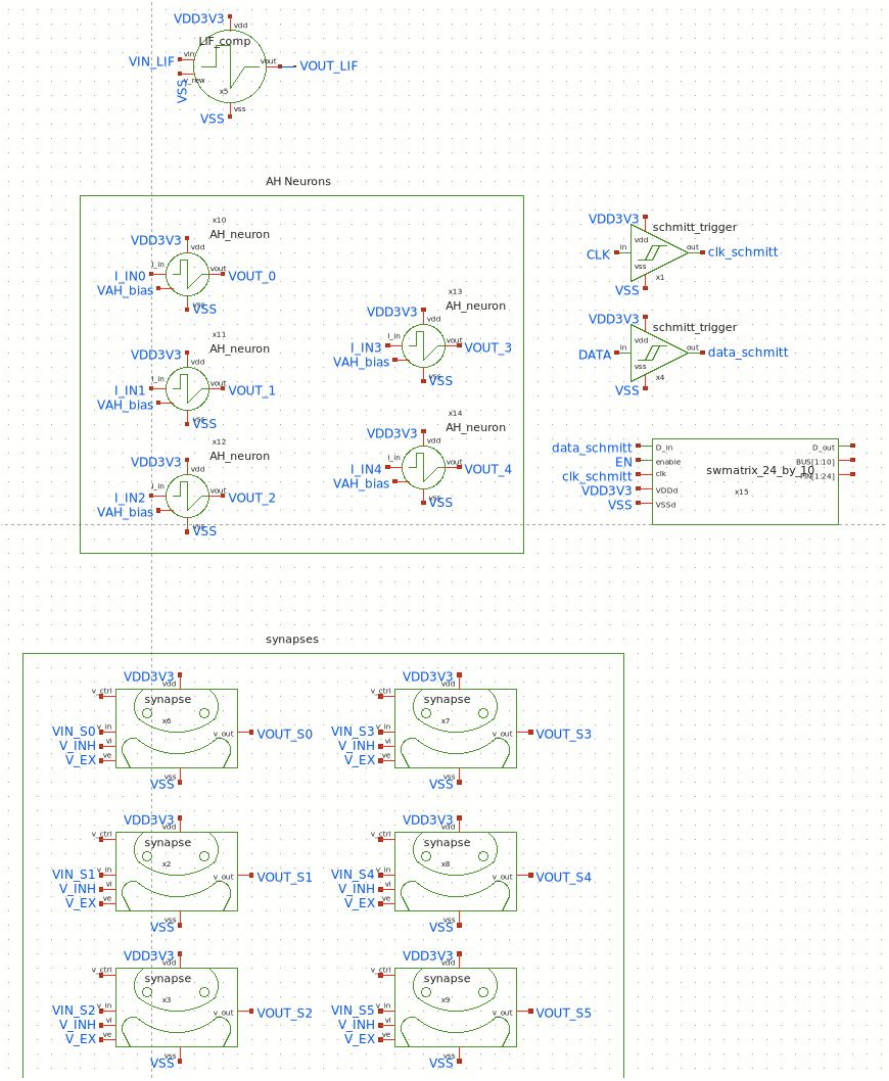
M13 - SpikCore

Mosbius Track

- The Spikcore project is the design of a reconfigurable neuromorphic chip, this neuromorphic chip can be used to test codification schemes, control strategies and learn about analog circuits and spiking neural networks
- Status: taped-out

Status	Checklist Item
Done	Schematics for subcells
Done	Symbols for subcells
Done	Schematic simulation for subcells
Done	Symbol for top cell completed
Done	Schematic simulation for top level
Done	Layout for subcells
Done	Verification of subcells (DRC)
Done	Verification of subcells (LVS)
Done	PEX simulation of subcells
Partial	PEX + PADS simulation of subcells
Done	Layout for top cell
Done	Verification of top cell (DRC)
Done	Verification of top cell (LVS)
Done	PEX simulation of top cell
Done	Timming and data fetch for configuration
Done	Integration with padframe
Done	Digital inputs verification of configuration bits
Done	Integration of subprojects
Done	Metal, comp and poly Dummy filling
Done	Verification with commercial tools
Done	Project submission and documentation





M13 - SpikCore

Mosbius Track

Lessons learned & best practices

- The Docker image worked perfectly, kudos.
- We needed to know the technology. e.g. The minimum capacitance on xschem is around 2 fF the minimum manufacturable capacitance is 50fF.

  Poly resistors bulk has to be tied to VSS, not VDD; on xschem it works fine, on layout it generates a short circuit

Work and improvement

- Documentation on the side of Global foundry needs some improvement on readability
- Some segments of the DRC are incomplete or present inconsistent rules based on the tapeout configuration (flavor). (Our team is willing to contribute in the implementation of said rules)

Requests

- We would like to request information regarding the utilization of Docker, specifically the procedures for creating custom images and uploading them to Docker Hub.

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Mosbius Track

Reflection / Feedback

- Our favorite part of the Chipathon were the presentations it significantly enhanced our team's ability to deliver technical reports effectively.
- LLMs were not utilized on our track
- We would like to suggest adding an additional two weeks for the final stage, specifically for the layout and verification process. This stage proved to be the most challenging and time-consuming part of the overall competition.