Secondment report

TIRAMISU DC3.3

Fellow:	Aobo Cui
Research project title:	“Software-based hardening solutions for AI-based architectures”
From:	PDT
To:	CDNS
Secondment period:	21.09.2026 – 16.10.2026

Activities during the secondment

Scope and objectives

- Conduct research work with DC2.3 and DC2.4, establish a foundation on functional safety test and verification.
- Participate the research work of CDNS about fault-tolerance of UCIe 3.0 interconnects.

Activities

- Attended courses (Functional Verification, RTL-to-GDS flow, etc.) provided by CDNS.
- Learned how to use tools developed by CDNS (Vmanager, AgentStack, etc.) to perform automatically fault injection and automation of simple circuit design.
- Started building RTL architecture that complies with the UCIe 3.0 standard, had an initial attempt to perform automatically fault injection on the proposed architecture.

Main results achieved

- Acquired a strong background of the Cadence environment and tools.
- Achieved an abstraction of UCIe 3.0 interconnect, gained knowledge about performing fault injection simulation at the RTL level.

Next steps

- Complete the architecture and perform thorough fault injection campaign including stuck-at and transient faults on the structure; gain fault-sensitive spectrum of the interconnect; develop a structure to improve the fault-tolerance of the interconnect.
- Collect the result and have a publication about this work.

Self-evaluation

Overall score

I consider this secondment successful, with regard to the research objectives achieved, skills developed, supervision quality and diversity of the resources. (Agree = 5 … Disagree = 1)

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Optional comments

None

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