Mohamed Bouaziz

mohamed-bouaziz | Webpage | mohamed.bouaziz@kaust.edu.sa | +966 555 819 368

Summary

PhD researcher designing scalable, high-performance reconfigurable **dataflow** accelerators. Experienced in **compiler** design using **MLIR**, **FPGA** overlay generation using **HLS/RTL**, and **irregular** workloads.

Work Experience

Doctoral Researcher - KAUST, Saudi Arabia Aug 2023 - present
Efficient Compilation and Deployment of Dataflow Applications on Reconfigurable Architectures.

Summer Research Intern – INRIA Nancy, France Jun 2023 - Aug 2023
Adding MLIR support to an academic auto-vectoriser (Autovesk).

Graduate Research Intern – KAUST, Saudi Arabia Sep 2021 - Dec 2021
Identifying extensions of CGRA-ME to support FPGA overlays.

Research Intern – TU Dresden, Germany Feb 2021 - Aug 2021
Accelerating the VTR/VPR FPGA router using parallelism.

Research Intern – University of Trento, Italy Aug 2020 - Sep 2020
Modelling the Multi-FPGA routing in MILP formulation.

Education

2023 - present PhD (Computer Science) at **KAUST, Saudi Arabia**
2022 - 2023 M.S (Computer Science) at **KAUST, Saudi Arabia**
2016 - 2021 Dipl.Ing.- M.Eng (Signals & Systems) at **Ecole Polytechnique de Tunisie, Tunisia**

Publications

Bouaziz, Mohamed and Suhaib A. Fahmy (2024). "Leveraging **MLIR** for Efficient Irregular-Shaped **CGRA Overlay Design**". In: *International Conference on Application-specific Systems, Architectures and Processors (ASAP)*.

– (2025a). "Benchmarking Floating Point Performance of **Massively Parallel Dataflow Overlays** on **AMD Versal Compute Primitives**". In: *International Parallel and Distributed Processing Symposium Workshops (IPDPSW)*. URL: https://github.com/accl-kaust/fp-versal-bench.

– (2025b). "PRNGine: Massively Parallel Pseudo-Random Number Generation and Probability Distribution Approximations on **AMD AI Engines**". In: *International Parallel and Distributed Processing Symposium Workshops (IPDPSW)*. URL: https://github.com/accl-kaust/prngine.

Bouaziz, Mohamed et al. (2025). "A Dataflow Overlay for Monte Carlo Multi-Asset Option Pricing on **AMD Versal AI Engines**". In: *ISC High-Performance*. URL: https://github.com/accl-kaust/mc-option-pricing-aie.

Honors & Awards

Dean's List Award - KAUST (2023 and 2025)
Excellence Scholarship - Ecole Polytechnique de Tunisie
Top 2% National Exams for Entrance to Engineering Schools (Tunisia)