

# FPGAs as manycore scientific coprocessors in high-level programming environments – Hastlayer

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Hastlayer aims to provide software developers of the .NET platform a tool to accelerate performance-critical parts of their programs with FPGAs. Hastlayer automatically generates FPGA-implemented logic circuits from .NET program code and masks that part of the software was swapped out with a hardware implementation – the surrounding software uses the hardware component just as it would be standard .NET software.

The session will show scientific computations can benefit from using FPGAs with Hastlayer while the applications are still developed with high-level programming tools.

Massively parallelized applications running as FPGA hardware will be demonstrated. The talk will be the debut of the .NET implementation of the high-precision Unum number format and the first “Unum processor”.

Presenters:

## **Benedek Farkas**

Co-founder and managing director of Lombiq. His main expertise is in .NET software development and software architecture design. Core contributor and localization manager of the open-source Orchard Content Management Framework. Guest lecturer at Óbuda University, John von Neumann Faculty of Informatics (Budapest, Hungary).

## **Zoltán Lehóczky**

Co-founder and managing director of Lombiq Technologies and originator of the Hastlayer project. His main expertise is in .NET software development and software architecture design. Z. L. is member of the Steering Committee of Orchard and also one of its core contributors. He was a technical speaker on four Orchard conferences and several meetups. He is guest lecturer at Óbuda University, John von Neumann Faculty of Informatics.