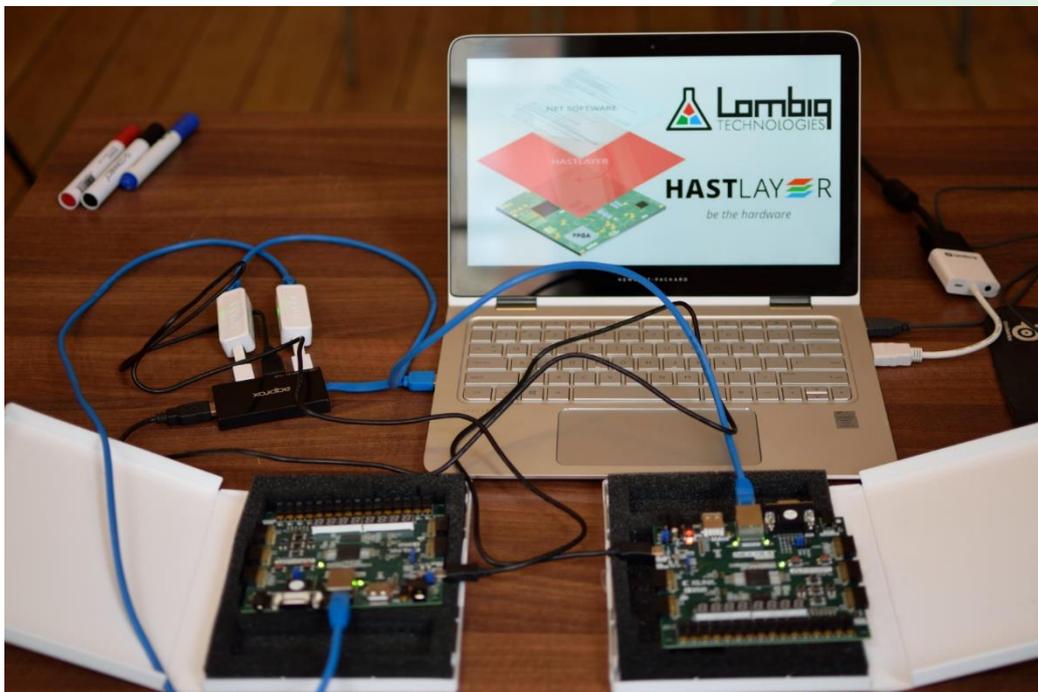


# Hastlayer

be the hardware

Hastlayer (<https://hastlayer.com/>) is a tool that gives software developers a way of speeding up their programs by basically turning them into computer chips. They write standard code, then instruct Hastlayer to process the computationally-intensive part of their program. That part will then be converted to logic hardware, while the rest of the software interacts with it as usual: Function calls work without changes, but in the background an embedded chip is crunching the data. This can provide a significant performance and power consumption benefit compared to CPU execution, especially if the algorithm is highly parallelized.

All this happens with FPGAs ([https://en.wikipedia.org/wiki/Field-programmable\\_gate\\_array](https://en.wikipedia.org/wiki/Field-programmable_gate_array)), which are chips that can be dynamically reconfigured to behave like any other computer chip.



Hastlayer is in an alpha stage but shows promising results on low-end hardware. We're now working with Microsoft's Project Catapult (<https://www.microsoft.com/en-us/research/project/project-catapult/>) to allow it to support big real-life workloads for high-performance computing scenarios. This will also allow us to offer Hastlayer in the cloud. Partnering with the Wigner Research Centre for Physics (<http://wigner.mta.hu/en/>), part of the Hungarian Academy of Sciences, we're testing scientific computations on the system.

We've previously showcased Hastlayer at a number of conferences, including Microsoft's .NET Conf (<https://channel9.msdn.com/events/dotnetConf/2017/T212>) and IEEE events.

Apart from running research projects like Hastlayer, we at Lombiq (<https://lombiq.com>) are a software company working with open Microsoft technologies. Our clients include Live Nation, the Smithsonian Institution and Microsoft itself.