

Title: FPG-AI: a Technology Independent Framework for Edge AI Deployment Onboard Satellite and its Characterisation on NanoXplore FPGAs

Abstract: The project aims to develop the first AI-to-FPGA toolflow supporting all state-of-the-art FPGAs, including NanoXplore devices. The objective is to facilitate AI deployment onboard satellites and demonstrate the applicability to NanoXplore technology, enhancing European sovereignty. We extended the FPG-AI design for compliance with NanoXplore technology, adding RNNs to the list of supported models and creating a hardware prototype. Results obtained during benchmarking indicate the success of accelerating AI models on rad-hardened FPGAs, reducing development time and cost and increasing performance compared to more advanced HLS approaches.