The accelerating growth of IoT devices and data that systems capture has spurred the industry to reconsider where to compute data and embrace a computing continuum.

**Cloud**: relatively centralized and offers big data storage and high computing power.

**Edge**: in this context, it refers to where endpoint devices plug into the network and end at the cloud.

**Near-Sensor**: where data is firstly computed. Nowadays it covers a large set of applications, such as signal processing and machine-learning applications.

This opens reflection to new specialized architecture taking advantage of the possible latency analysis and knowledge of data movements.

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**Coarse Grain Anisotropic Datapath**

Early works of this Ph.D. thesis are investigating custom coarse grain datapath using the PathTracing latency analysis for design space exploration and the notifying memory concept to optimize memory usage. The work will use the dataflow prototyping framework PREESM and the open-source SoC builder LiteX.