# Literature Review on Neuromorphic Computation

As more problems arise with our classical approach of cramming more transistors onto silicon chips, a new strategy to increase computational power is required. There are not many ways to address this problem. One is quantum computing, which has even more issues than the classical approach and is far from being commercially viable. The other is neuromorphic computing which represents a paradigm shift in computing architecture inspired by the human brain's neural networks. It emerged from the desire to harness the brain's ability to process immense amounts of information rapidly and at a negligible energy cost. It consists of artificial neurons and synapses that simulate how our brains process signals. Unlike modern deep learning methodologies, this is not abstract as it is based entirely on hardware. This approach offers several desirable features, including remarkably low energy consumption, immense parallelism, event-driven processing, and exceptional adaptability.

Even if the current generation of neuromorphic processors isn't superior to today's supercomputers, they are viable for commercial projects at this early stage of development. For example, Innotera Spiking Neural Processor T1 offers the ability to inference an AI solution on a chip with a size less than a pinky, or Akida from Brainchip, which can even run vision transformers at the edge and SynSense company has a whole collection of different chips, Intel has also jumped into the field of neuromorphic computing with its Loihi 1 and 2 processors.

All these products have features that make them excel in