# Department Of CSE

# Byte Quest
# Issue 177

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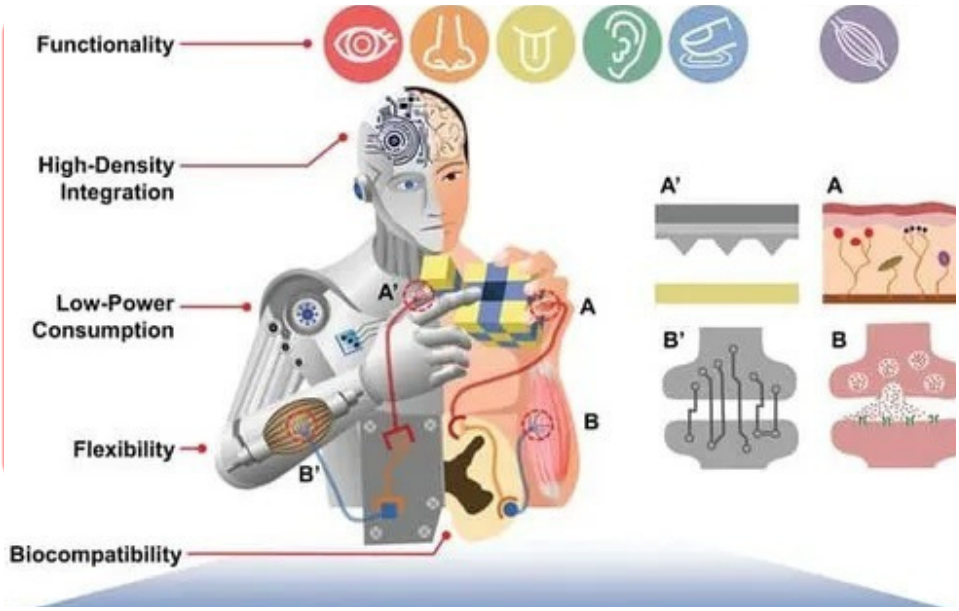


## Department Vision

To be acenter foracademicexcellence in the field of Computer Science and Engineering education to enable graduates to be ethical and competent professionals.

## Department Mission

Toenablestudentsto develop logic and problem solving approach that will help build their careers in the innovative field of computing and provide creative solutions for the benefit of society.

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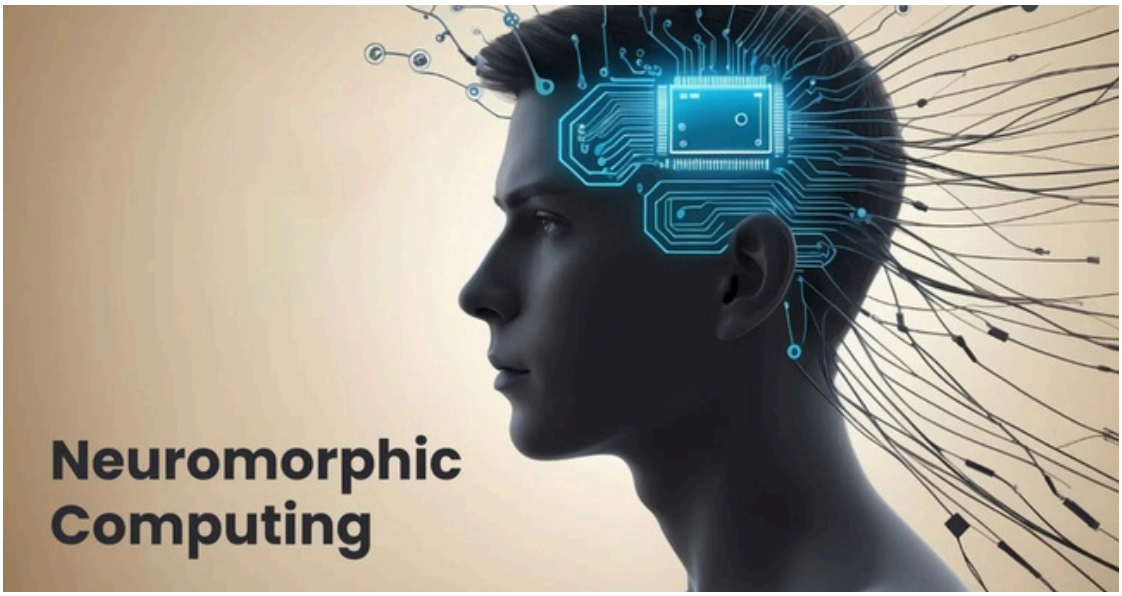



Today's AI systems rely on traditional computer architectures that are powerful but energy-hungry and limited in adaptability. Neuromorphic computing takes inspiration from the human brain, aiming to create machines that can learn, adapt, and think more naturally.

## 1.What is Neuromorphic Computing?

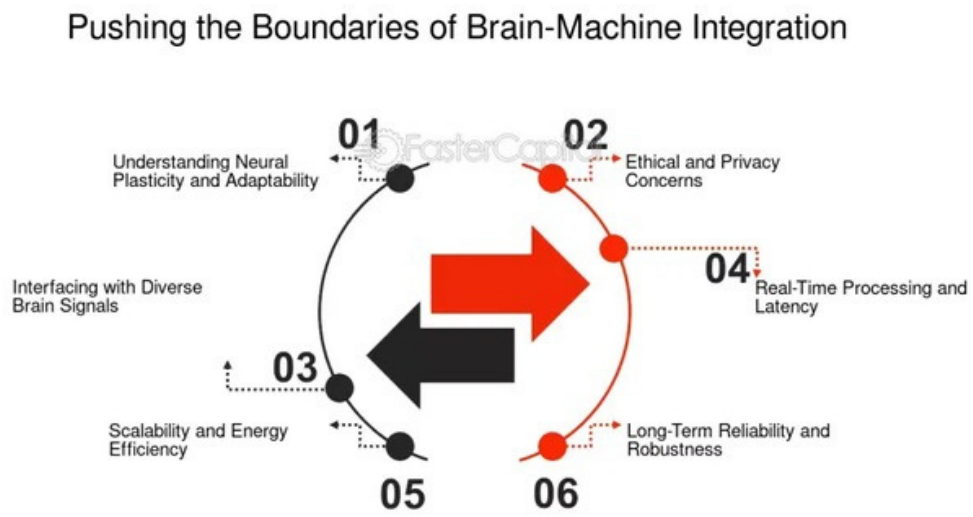
Neuromorphic computing is a brain-inspired approach where hardware is designed to replicate the working of neurons and synapses. Unlike traditional computers that separate memory and processing, neuromorphic chips combine them to reduce delays and power usage. By processing information in parallel, just like the human brain, these systems achieve real-time learning and adaptability.

## 2.Why it Matters?

Neuromorphic systems consume far less energy than GPUs while adapting in real time. This efficiency makes them ideal for robotics, IoT, healthcare, and edge AI devices.

## 3. Challenges

Despite the promise, neuromorphic computing is still at an experimental stage, and building such chips is costly and complex. There are no standard programming tools or ecosystems that make development easy for researchers and companies. Integration with today's computing infrastructure also remains a big challenge, slowing down adoption.




## 4.Future Applications

In healthcare, neuromorphic computing could power smart prosthetics and brain–computer interfaces that respond just like natural limbs. Autonomous systems such as self-driving cars and robots could use it to adapt instantly to changing environments. IoT devices, defense systems, and cybersecurity tools could become more intelligent, secure, and adaptive with this technology.

## 5. A GLimpse into Tomorrow

Neuromorphic computing is still young but has the potential to revolutionize AI by making it efficient, scalable, and brain-like. If developed successfully, it could lead to machines that learn and react as naturally as humans. The race is on, and the future of computing might well be modeled after the human brain itself.