



MAGAZINE

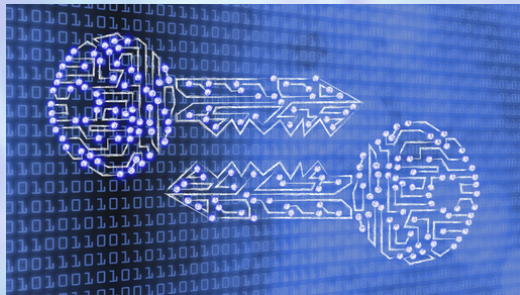
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Department of

CSE

Byte Quest



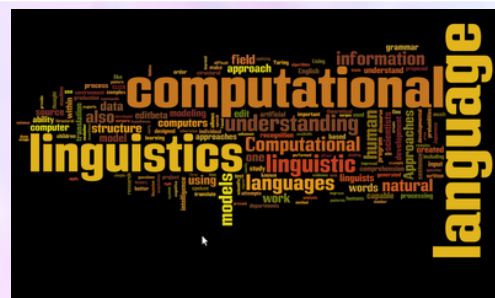
CRYPTO COMPUTING



BIO-INSPIRED COMPUTING



GREEN COMPUTING



COMPUTATIONAL LINGUISTICS

Department Vision

To be a center for academic excellence in the field of Computer Science and Engineering education to enable graduates to be ethical and competent professionals.

FACULTY COORDINATORS

KOMAL KAUR
ASSISTANT PROFESSOR
DR. BHARGAVI PEDDIREDDY
ASSOCIATE PROFESSOR

Department Mission

To enable students to 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.

STUDENT COORDINATORS

TALLURI CHANDRA KIRAN (3/4) CSE C
AMOGHA KANDURI (3/4) CSE C



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CRYPTO COMPUTING

Cryptography is the science of encrypting and decrypting data. Based on complex mathematics, cryptography provides several important information security services such as authentication, confidentiality, integrity, and non-repudiation. Cryptographic protocols and applications make cryptography user-friendly and enable users to secure their data without having to carry out the complex mathematics themselves.



Based on the type of keys used, cryptography is classified as either symmetric or asymmetric key cryptography. Both symmetric and asymmetric key cryptography provide data confidentiality. Asymmetric key encryption is sometimes called public key encryption. Digital signatures, one of the by-products of public key cryptography, enable the verification of authenticity, integrity, and non-repudiation.

While cryptography enables security, there are attempts to circumvent and subvert its use. Since most of the cryptographic algorithms are public knowledge, security of the data is reliant on the security of the cryptographic key. This makes it very important to safeguard the cryptographic keys.

BIO-INSPIRED COMPUTING

Bio-inspired computing, short for biologically inspired computing, is a field of study which seeks to solve computer science problems using models of biology. It relates to connectionism, social behavior, and emergence. Within computer science, bio-inspired computing relates to artificial intelligence and machine learning. Bio-inspired computing is a major subset of natural computation.



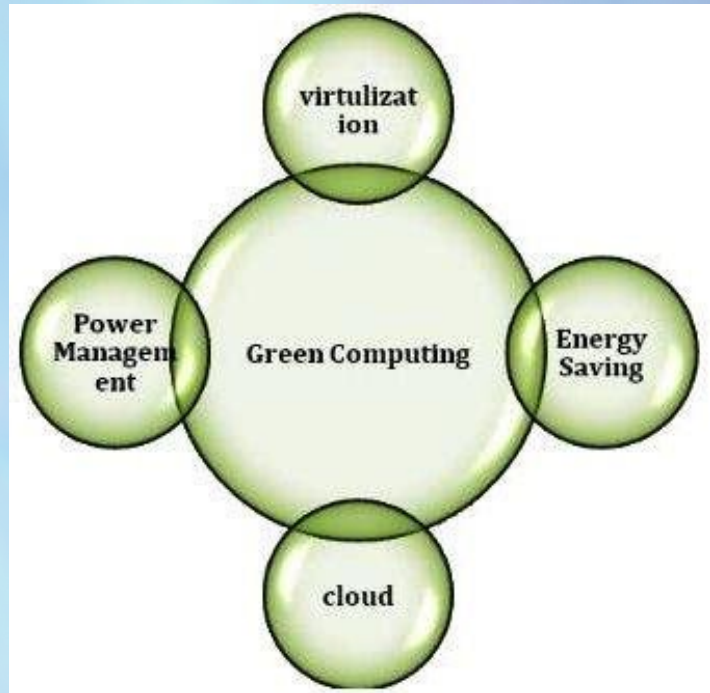
neural networks are a prevalent example of biological systems inspiring the creation of computer algorithms.[3]. They first mathematically described that a system of simplistic neurons was able to produce simple logical operations such as logical conjunction, disjunction and negation. They further showed that a system of neural networks can be used to carry out any calculation that requires finite memory. Around 1970 the research around neural networks slowed down and many consider a 1969 book by Marvin Minsky and Seymour Papert as the main cause.



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GREEN COMPUTING

Green computing, or sustainable computing, is the practice of maximizing energy efficiency and minimizing environmental impact in the ways computer chips, systems and software are designed and used. In their working lives, green computers must deliver the most work for the least energy, typically measured by performance per watt.



Green computing is a significant tool to combat climate change, the existential threat of our time.

Global temperatures have risen about 1.2°C over the last century. As a result, ice caps are melting, causing sea levels to rise about 20 centimeters and increasing the number and severity of extreme weather events.

The rising use of electricity is one of the causes of global warming. Data centers represent a small fraction of total electricity use, about 1% or 200 terawatt-hours per year, but they're a growing factor that demands attention.

Powerful, energy-efficient computers are part of the solution. They're advancing science and our quality of life, including the ways we understand and respond to climate change. Engineers know green computing is a holistic discipline.

"Energy efficiency is a full-stack issue, from the software down to the chips," said Sachin Idgunji, co-chair of the power working group for the industry's MLPerf AI benchmark and a distinguished engineer working on performance analysis at NVIDIA. Idgunji's work is a job description for a growing cadre of engineers building products from smartphones to supercomputers.

