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Department of

CSE

Byte Quest

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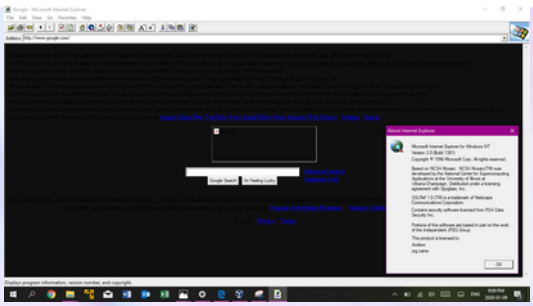
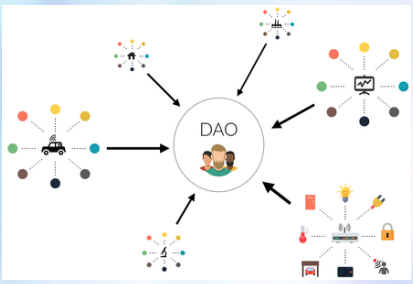
LINGUISTICS AND COMPUTERS



BACKWARD COMPATIBILITY



DAO

COBI ROBOT

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.

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.

FACULTY COORDINATORS

STUDENT COORDINATORS

CHANDRASHEKAR (2/4) CSE B
SRIRAM (2/4) CSE A
ANISHA (4/4) CSE B
AKASH (3/4) CSE C

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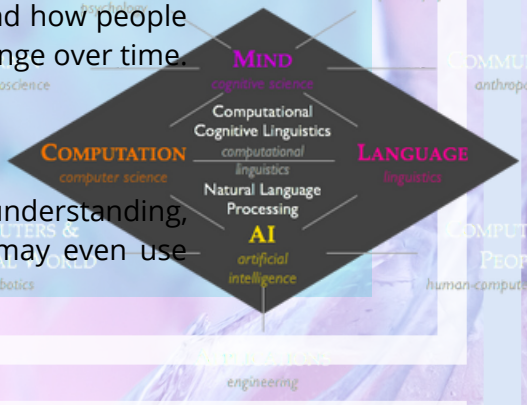
LINGUISTICS AND COMPUTERS

Linguistics and computer science have plenty to offer individually and combined. You may find yourself at computer science's cutting edge by pairing these unlikely fields.

According to the Linguistic Society of America, computational linguistics uses computers to analyze natural languages and how people process them. The interdisciplinary field formally began in the 1940s and 1950s with machine translation. Computational linguistics arose as these systems increased in complexity.
Since then, computers have helped researchers better understand how people develop and process language and how meaning and sounds change over time. The field has contributed to applications such as:

- Speech recognition software
- Spellcheck

Computational linguistics could someday lead to computers understanding, analyzing, and translating all texts and languages. Computers may even use language as well as humans do.



BACKWARD COMPATIBILITY

In the context of telecommunications and computing a device or technology is said to be backwards or downwards compatible if it can work with input generated by an older device.[1] If products designed for the new standard can receive, read, view or play older standards or formats, then the product is said to be backwards-compatible; examples of such a standard include data formats and communication protocols. Jocularly referred to as "hysterical raisins" i.e., a homophone like phrase for "historical reasons".

In programming languages, backwards compatibility refers to the ability of a compiler for version N of the language to accept programs or data that worked under version N - 1.[2] (By this definition, if version N - 1 and other previous versions were also backward compatible, which is often the case, then by the principle of recursion, version N will also accept input that worked under any prior version after the latest one that was not non–backward compatible. However, in practice, features are often deprecated and support is dropped in a later release - yet still thought of as backwards compatible.) In other contexts, a product or a technology is said to be backward compatible when it is able to fully take the place of an older product, by inter-operating with products that were designed for the older product.

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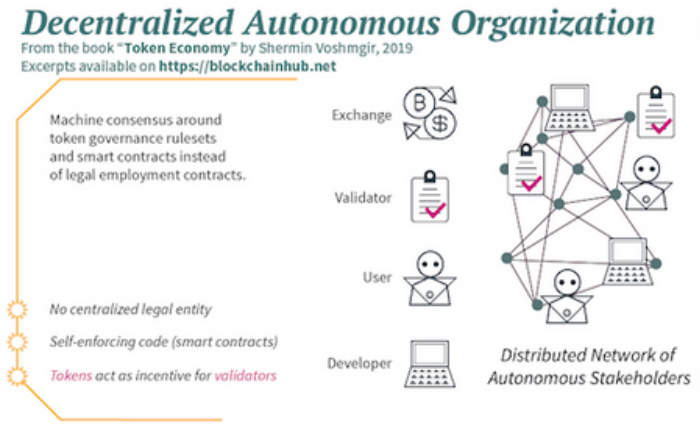
DECENTRALIZED AUTONOMOUS ORGANIZATION

A decentralized autonomous organization (DAO), sometimes called a decentralized autonomous corporation (DAC), is an organization represented by rules encoded as a computer program that is transparent, controlled by the organization members and not influenced by a central government.



Decentralized autonomous organizations are typified by the use of blockchain technology to provide a secure digital ledger to track digital interactions across the internet, hardened against forgery by trusted timestamping and dissemination of a distributed database. This approach eliminates the need to involve a mutually acceptable trusted third party in any decentralized digital interaction or cryptocurrency transaction. The costs of a blockchain-enabled transaction and of the associated data reporting may be substantially offset by the elimination of both the trusted third party and of the need for repetitive recording of contract exchanges in different records. For example, the blockchain data could, in principle and if regulatory structures permit it, replace public documents such as deeds and titles. In theory, a blockchain approach allows multiple cloud computing users to enter a loosely coupled peer-to-peer smart contract collaboration.

Vitalik Buterin proposed that after a DAO is launched, it might be organized to run without human managerial interactivity, provided the smart contracts are supported by a Turing-complete platform. Ethereum, built on a blockchain and launched in 2015, has been described as meeting that Turing threshold, thus enabling such DAOs. Decentralized autonomous organizations aim to be open platforms through which individuals control their identities and their personal data.

DAO governance is coordinated using tokens or NFTs that grant voting powers. Admission to a DAO is limited to people who have a confirmed ownership of these governance tokens in a cryptocurrency wallet, and membership may be exchanged. Governance is conducted through a series of proposals that members vote on through the blockchain, and the possession of more governance tokens often translates to greater voting power. Contributions from members towards the organizational goals of a DAO can sometimes be tracked and internally compensated. Inactive holders of governance tokens can be a major obstacle for DAO governance,[5] which has led to implementations of allowing voting power to be delegated to other parties.

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COBI ROBOT

It goes without saying that a lot of people are receiving the COVID-19 vaccine these days, and will continue to do so for some time. A new robot is designed to help streamline the process, by autonomously – and needle-lessly – vaccinating human patients.
Known as Cobi, the device was developed by Canadian startup Cobionix, a University of Waterloo spinoff company. It's claimed to be the first robot to ever successfully perform an intramuscular injection, and it did so without using a hypodermic needle.

The idea is that after pre-registering for a vaccination online, patients will show up at a clinic or other location that's utilizing a Cobi robot, then display a piece of identification to a camera on the unit's touchscreen interface. As they arrive, multiple 3D depth sensors detect their presence.
Once their ID has been verified, the Cobi robotic arm retrieves a vial of vaccine from a built-in storage area. A LiDAR sensor on the "hand" of that arm is then used to create a 3D digital map of the patient's body, which is analyzed via AI-based software to determine the optimal injection site.

Utilizing a third-party needle-less technology, the vaccine itself is subsequently injected in the form of a high-pressure jet of fluid that passes through a human-hair-width orifice. The company is unable to provide more details at this time.
Cobionix co-founder Tim Lasswell tells us that it will be about two years before Cobi enters the healthcare market. Once that time comes, it is hoped that the robot will allow more people to be vaccinated at once, while also lowering healthcare costs – it could additionally be utilized in remote locations which lack trained clinicians.

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