



## Department of Computer Science & Engineering

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### Vision of the Institute

To be a nationally recognized institution of excellence in technical education and produce competent professionals capable of making a valuable contribution to society.

### Mission of the Institute

- ◆ To promote academic growth by offering state-of-the-art undergraduate and postgraduate programs.
- ◆ To undertake collaborative projects which offer opportunities for interaction with academia and industry.
- ◆ To develop intellectually capable human potential who are creative, ethical and gifted leaders

### Vision of the Department

To be a center of academic excellence in the field of computer science and engineering education.

### Mission of the Department

- ◆ Strive for academic excellence in computer science and engineering through well designed course curriculum, effective classroom pedagogy and in-depth knowledge of Laboratory work
- ◆ Create computing centres of excellence in leading areas of computer science and engineering to provide exposure to the students on latest software tools and computing technologies.
- ◆ Attain these through continuous team work by group of committed faculty, transforming the computer science and engineering department as a leader in imparting computer science and engineering education and research .
- ◆ Transform under graduate engineering students into technically competent, socially responsible and ethical computer science and engineering professionals.
- ◆ Incubate, apply and spread innovative ideas by collaborating with relevant industries and R&D labs through focused research group.

### ( Web 3.0 and the Decentralized Internet)

**Web 3.0**, also called the **Semantic Web** or **Decentralized Web**, is the third generation of internet services that focuses on:

- Decentralization
- User ownership
- Intelligent systems
- Interoperability
- Privacy & transparency

Unlike Web 1.0 (static web pages) and Web 2.0 (interactive, user-generated content hosted on centralized platforms), **Web 3.0 allows users to control their data and participate in peer-to-peer networks without central authorities.**

**Web 3.0**, often called the **decentralized web**, represents the next major evolution of the internet. Unlike **Web 1.0**, which consisted of simple, static web pages that users could only read, and **Web 2.0**, which introduced interactive, user-generated content but relied heavily on centralized platforms like Google, Facebook, or YouTube, Web 3.0 gives control back to the users. It is built on technologies such as **blockchain, smart contracts, and decentralized networks**, enabling direct peer-to-peer interactions without intermediaries.



## Use Cases

### 1. Finance (DeFi)

- Peer-to-peer lending, trading, and payments without banks.
- E.g., Uniswap, Aave

### 2. Digital Identity

- Self-sovereign ID systems.
- No reliance on Google or Facebook for logins.

### 3. NFTs and Digital Ownership

- Ownership of digital art, music, land, etc.
- Traded transparently on blockchain.

### 4. Decentralized Social Media

- Platforms like **Lens Protocol** and **Mastodon** that do not harvest or sell user data.

### 5. Decentralized Storage

- Platforms like Filecoin, Arweave store files across multiple locations securely.

## Evolution of the Web:

- **Web 1.0 (1990s)**: Only read websites. Like online books or newspapers.

- **Web 2.0 (2000s–now)**: You can read, write, and share. Social media, YouTube, Instagram. But big companies (like Google, Meta) **control your data**.

- **Web 3.0**: You read, write, and **own your data**. It's **decentralized**—no single company controls it



