Semantic web

**The semantic web is an addition to the existing web that makes it possible for data to be shared and utilized by many communities, businesses, and apps. It’s made so it can make data linked and machine-readable. This allows computers to share and interpret information in a way that is useful choices. The web is currently split into 3 types of web 2.0, web 3.0 and web 4.0.**

**Web 2.0: it emphasizes user usability and interoperability and mainly works with user generated content, for example a picture shared on social media, and it allows users to participate and interact with each other online like on social media and blogs.**

**Web 3.0: It’s known as the semantic web. It prioritizes smart information processing like for example Ai driven tools like ChatGPT and blockchain and cryptocurrency like Bitcoin and Ethereum transactions. It utilizes machine readable data.**

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| --- | --- | --- |
| Web generation | Technologies Used | Applications |
| Web 2.0 | **- AJAX (Asynchronous JavaScript and XML)  - RSS Feeds  - APIs for service integration  - JavaScript frameworks (e.g., jQuery)  - Eclipse IDE** | **- Social media platforms (Facebook, Twitter) - Blogging platforms (WordPress, Blogger) - Collaborative projects (Wikipedia) - Video sharing sites (YouTube)** |
| Web 3.0 | **- Semantic Web technologies (RDF, OWL, SPARQL) - Artificial Intelligence (AI) and Machine Learning (ML) - Natural Language Processing (NLP) - Blockchain technology** | **- Intelligent virtual assistants (Siri, Alexa) - Personalized recommendation systems (Netflix, Spotify) - cryptocurrency platforms (Ethereum)** |
| Web 4.0 | **- Advanced AI and ML algorithms - Internet of Things (IoT) - Virtual Reality (VR) and Augmented Reality (AR)** | **- Smart environments (smart homes, smart cities) - Autonomous vehicles (self-driving cars) - Immersive VR and AR experiences (education, gaming)** |

*\*Note.\* Adapted from Rouse (2020).*

**Is Ai considered a Semantic web?**

**No, AI is not a semantic web itself but it plays a crucial role in it as semantic webs uses AI technology to process and make a large amount of data machine readable and then AI use that data to interpret the context and the meaning of the information provided by the structure that was given semantic web.**

**In conclusion, the semantic web is a an evolved version of the web where it process data and structures it so machines can understand it.**

**Web2.0 vs Web3.0 vs Web4.0:**

* **Web 2.0 focuses on user activity between each other.**
* **Web 3.0 emphasizes smart data interpretation and AI assistance.**
* **Web 4.0 it’s a concept of the future where intelligent web interactions are made seamlessly with other users and devices.**

Reference list:

Rouse, M. (2020). *Web 2.0 (or Web 2)*. TechTarget. <https://www.techtarget.com/whatis/definition/Web-20-or-Web-2>