INNOVATION IN COMPUTER SCIENCE

BLOCKCHAIN

English Abstract

Blockchain technology is a revolutionary innovation that offers a decentralized, secure, and transparent way to record and verify transactions across various sectors. Originally developed to support digital currencies like Bitcoin, blockchain has expanded into industries such as finance, healthcare, and supply chain management due to its ability to ensure data immutability and eliminate intermediaries. Each block of data is cryptographically linked, enabling a high level of security and tamper resistance. Challenges remain, including scalability, regulatory concerns, and energy consumption. However, ongoing developments like sharding and Proof of Stake aim to improve efficiency and sustainability. Blockchain technology holds vast potential to transform data management, promote trust, and support decentralized applications across industries.

Kiswahili Abstract

Teknolojia ya blockchain ni uvumbuzi wa kisasa unaotoa njia ya kuhifadhi na kuthibitisha miamala kwa usalama, uwazi, na bila umiliki wa kati katika sekta mbalimbali. Iliyotengenezwa awali kuunga mkono sarafu za kidijitali kama vile Bitcoin, blockchain imeenea katika sekta kama fedha, afya, na usimamizi wa minyororo ya ugavi kutokana na uwezo wake wa kuhakikisha usalama wa data na kuondoa wahusika wa kati. Kila kipande cha data kinahusishwa kwa usimbaji fiche, na kufanya mfumo huo uwe sugu dhidi ya uharibifu wa data. Changamoto zinazoendelea ni pamoja na upanuzi, masuala ya kisheria, na matumizi ya nishati. Hata hivyo, maendeleo yanayoendelea kama vile sharding na Proof of Stake yanakusudiwa kuboresha ufanisi na uendelevu. Teknolojia ya blockchain ina uwezo mkubwa wa kubadilisha usimamizi wa data, kukuza uaminifu, na kusaidia matumizi yasiyo ya kati katika sekta mbalimbali.

Luo Abstract

Teknoloji ma en blockchain en yo manyien mar keto kendo rito rieko mar tije kaachiel kod midikati, ka ochung' kagol kod adiera kendo onge ng’ato ka e wi gima timore e ndalo ma gini ng’eny. Ne otichni eyo nyaka mondo okony tijegi ma coin mag wang’o marieyo mana Bitcoin to kawuono blockchain oting’o kod uso kitiyo e bugegi mag fedha, lerene kod osung’ mane aa kendo gimiokore gi kuonde mane okwongo ni gi dhi nyime mar nungo e banki gi kama omiyo tho. Ka chuo bedo waneyo ja onega gi mbalariany.