Patent Search

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Abstract:

ABSTRACT The present invention discloses an advanced artificial intelligence based autonomous learning architecture designed to function with minimal human oversight or manual intervention. Conventional machine learning frameworks often rely heavily on pre labeled datasets, frequent hyper parameter tuning by human engineers, and manual retraining cycles to maintain accuracy in dynamic environments. The invention overcomes these limitations by implementing a self evolving neural framework that utilizes intrinsic curiosity driven modules and automated reward shaping to navigate complex data landscapes without external guidance. The architecture incorporate s a multi layered feedback loop that allows the system to identify its own knowledge gaps through uncertainty quantification. By leveraging an integrated meta learning layer, the system can autonomously adapt its learning strategies based on the nature of incoming data streams, effectively shifting between supervised, unsupervised, and reinforcement learning

Complete Specification

Description:DETAILED DESCRIPTION OF THE INVENTION
The present invention comprises an in
tegrated hardware software architecture for an
autonomous learning agent. The primary input stage consists of a Multi Source Data
Ingestion (MSDI) layer, which is capable of handling unstructured data from various sensors
and digital feeds. This data is no t immediately processed by the main neural network; instead,
it passes through a Pre Processing and Anomaly Detection unit that identifies if the incoming
data is within the system's current "Competence Zone." If the data is recognized as highly
novel, it is flagged for the Curiosity Driven Exploration module.
The core of the architecture is the Evolutionary Neural Core (ENC). Unlike standard deep
learning models with fixed weights, the ENC utilizes a hybrid gradient descent and
evolutionary strategy to upd ate its parameters. The meta learning layer monitors the gradients
and loss curves of the ENC. If the meta layer detects a plateau or a divergence in learning, it
triggers a "Top , Claims:CLAIMS
1. An AI based autonomous learning architecture comprising a Dynamic N eural

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