What is a model file supply chain attack?

A model file supply chain attack hides malicious behaviour in a shared machine-learning model or dataset so that downloading and loading it compromises the consumer. Pickle-based formats execute code on load; HDF5 and config-driven formats can read files or evaluate templates. Because teams pull artifacts from public hubs and load them automatically, a single poisoned model or a typosquatted name can spread widely. Defend by verifying publishers, preferring safe formats, scanning artifacts, and sandboxing loads.

HOW IT WORKS

01 How it works and example

The classic vector is a pickle-serialised model whose deserialisation runs arbitrary code on load. HDF5 files abuse external storage to read local files, and config-driven loaders evaluate templates for execution. Attackers also typosquat popular model names, publish poisoned weights, or compromise an account to push a malicious update, so a routine dependency pull delivers the payload.

SOURCES

[1] MITRE ATLAS, Adversarial ML tactics

[2] HuggingFace, Agent intrusion technical timeline

Test whether your AI stack survives real attacks.

securelayer7.net/learn/ai-security/model-file-supply-chain-attack

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