

Graph-Based Fraud Detection Architecture (AAAI 2024)

Inspired by: *Graph-Based Fraud Detection in Sight of Heterophily and Spectrum*

1. Problem Overview

Detect fraudulent nodes in transaction graphs under heterophily.

2. High-Level Architecture

Graph Input → Preprocessing → GNN Models → Spectral Enhancement → Classification → Evaluation/API

3. Components

Graph Input, Preprocessing, GNN (GCN/GraphSAGE/GAT), Spectral Module, Classifier, Evaluation

4. Implementation Steps

Load data → Analyze heterophily → Train GNN → Apply spectral methods → Evaluate → Deploy API

5. System Characteristics

CPU-friendly, graph-based, research-aligned