

PENGYU FENG

The Ohio State University
Columbus, Ohio
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Undergraduate Researcher · Computer Science and Engineering

PROFILE

Second-year undergraduate researcher studying reliable machine learning under temporal shift, limited information, and asymmetric error costs. Interests include graph representation learning, financial forensics, and medical image analysis.

EDUCATION

The Ohio State University · Computer Science and Engineering
Undergraduate studies · Columbus, Ohio

Current sophomore

PUBLICATIONS

ACCEPTED	Pengyu Feng. "Exploring Topological Resilience: A Decoupled Dual-Pathway Graph Neural Network for Bitcoin Anti-Money Laundering under Concept Drift." <i>Accepted full paper, TELEPE 2026</i> , Frankfurt, Germany, June 24–26, 2026. View ↗
PUBLISHED	Pengyu Feng. "Application of Machine Learning and Deep Learning in Medical Image Segmentation—an Example of Liver CT Images." <i>ACCTCS 2025, IEEE</i> . DOI: 10.1109/ACCTCS66275.2025.00026. View ↗

SELECTED RESEARCH

- Temporal Graph Learning for Bitcoin Anti-Money Laundering · Independent Research**2026
 - Designed TSG-Net, a dual-pathway model coupling multi-head graph attention with a local-feature anchor to preserve transaction-level signals under concept drift.
 - Evaluated 203,769 Elliptic transaction nodes with a strict out-of-time protocol: T1–27 train, T28–34 validate, and T35–49 future test, using only 94 local features.
 - The accepted study reports 0.96 illicit-class precision, 0.61 recall, and 0.75 F1; compared Random Forest, GCN, GraphSAGE, GIN, and GATv2 and conducted component ablations.
- Machine Learning for Liver CT Image Segmentation · Independent Research**2025
 - Completed a sole-author research cycle spanning literature review, experimental comparison, analysis, and academic writing; investigated classical and convolutional segmentation approaches.
 - Studied attention mechanisms and multi-scale feature fusion for medical-image segmentation; published the work in IEEE conference proceedings during the first undergraduate year.

TECHNICAL SKILLS

PROGRAMMING	Python
ML STACK	PyTorch, PyTorch Geometric, scikit-learn, pandas, NumPy
METHODS	GATv2, GCN, GraphSAGE, GIN, CNN, SVM, Random Forest, focal loss, ablation studies
RESEARCH TOOLS	Jupyter, Google Colab, Matplotlib, Seaborn, t-SNE, UMAP