

2025 IEEE 11th International Conference on Intelligent Data and Security (IDS 2025)

**New York City, New York, USA
9-11 May 2025**



**IEEE Catalog Number: CFP25VK1-POD
ISBN: 979-8-3315-9662-0**

**Copyright © 2025 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

***** *This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP25VK1-POD
ISBN (Print-On-Demand):	979-8-3315-9662-0
ISBN (Online):	979-8-3315-9661-3

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

2025 IEEE 11th International Conference on Intelligent Data and Security (IDS)

IDS 2025

Table of Contents

Message from the General Chairs	viii
Message from the Program Chairs	x
Organizing Committee	xi

IDS 1

The Role of Aggregator Topology on the Impact of False Data Injection Attacks	1
<i>Javad Mokhtari Koushyar (Texas State University, USA), Mina Guirguis (Texas State University, USA), and George Atia (University of Central Florida, USA)</i>	
A Survey of ML Resources for IEC 61850 in Power Grid Security	5
<i>Kishan Baranwal (Indian Institute of Science, India) and Haresh Dagale (Indian Institute of Science, India)</i>	
A Code Embedding-Based Java Software Risk Detection Method	15
<i>Chen Zhang (State Grid Zhejiang Electric Power Corporation Information & Telecommunication Branch, China), Ling Wang (State Grid Zhejiang Electric Power Corporation Information & Telecommunication Branch, China), Hanyu Rao (State Grid Zhejiang Electric Power Corporation Information & Telecommunication Branch, China), Xiaojun Shen (State Grid Zhejiang Electric Power Corporation Information & Telecommunication Branch, China), Yiliang Wang (State Grid Zhejiang Electric Power Corporation Information & Telecommunication Branch, China), and Kun Tong (Beihang University, China)</i>	

IDS 2

Robust Subgraph Learning by Monitoring Early Training Representations	21
<i>Sepideh Neshatfar (University of Maine, United States) and Salimeh Yasaei Sekeh (San Diego State University, United States)</i>	

Multi-Factor Authentication Key Pre-Distribution Scheme for Security Isolation System of Next Hop Resolution Protocol	33
<i>Jichao Ye (State Grid Zhejiang Electric Power Co. LTD. Lishui Power Supply Company, China), Hui Huang (State Grid Zhejiang Electric Power Co. LTD. Lishui Power Supply Company, China), Aoying Ji (State Grid Zhejiang Electric Power Co. LTD. Lishui Power Supply Company, China), Wu Lu (State Grid Zhejiang Electric Power Co. LTD. Lishui Power Supply Company, China), Yonghai Xu (State Grid Zhejiang Electric Power Co. LTD. Lishui Power Supply Company, China), and Ping Wang (State Grid Zhejiang Electric Power Corporation Information & Telecommunication Branch, China)</i>	
Enhancing Developer Productivity: Benchmarking LLM-Powered Tools Like GitHub Copilot and TabNine in Real-Time Coding Environments	39
<i>Faten Slama (TÉLUQ University, Canada) and Daniel Lemire (TÉLUQ University, Canada)</i>	

IDS 3

A New DAPO Algorithm for Stock Trading	46
<i>Ruijian Zha (Columbia University, USA) and Bojun Liu (Columbia University, USA)</i>	
RKEFino1: A Regulation Knowledge-Enhanced Large Language Model	49
<i>Yan Wang (Yale University, USA), Yu'er He (Columbia University, USA), Ruoyu Xiang (New York University, USA), and Jeff Zhao (The University of Texas at Austin, USA)</i>	
Enhancing FinRL Trading Agents with Advanced LLM-Processed Financial News: An Improved Approach using DeepSeek-V3	52
<i>Satish Chandra (Anurag University, India) and G. Balakrishna (Anurag University, India)</i>	

IDS 4

AlphaSeek FinRL: A Hybrid Deep Learning Architecture for High-Frequency Cryptocurrency Trading	55
<i>Jun-Chi Liu (East China University of Science and Technology, China), Jun-Chao Ma (East China University of Science and Technology, China), and Zhi-Qiang Jiang (East China University of Science and Technology, China)</i>	
LLMs Meet Finance: Fine-Tuning Foundation Models for the Open FinLLM Leaderboard	58
<i>Varun Rao (University of Maryland, MD), Youran Sun (University of Maryland, MD), Mahendra Kumar (University of Maryland, MD), Tejas Mutneja (University of Maryland, MD), Agastya Mukherjee (University of Maryland, MD), and Haizhao Yang (University of Maryland, MD)</i>	
Option-Driven Sentiment in FinRL: A PPO Approach to Trading	62
<i>Shenjian Li (University of Otago, New Zealand), Mingxuan Yu (University of Otago, New Zealand), and Freddie Dossor (University of Otago, New Zealand)</i>	

IDS 5

Parallel Market Environments for FinRL Contests	65
<i>Keyi Wang (Columbia University, USA), Kairong Xiao (Columbia University, USA), and Xiao-Yang Liu Yanglet (Columbia University, USA)</i>	
HMM-Based Market Regime Detection with RL for Portfolio Management	68
<i>Jean Ndoutoumou (Numeraxial LLC, NY), Zining Yin (Columbia University, NY), and Xiaochang Cheng (New York University, NY)</i>	
FinRL: Adaptive Model Selection for Reinforcement Learning in Stock Trading	71
<i>Vorakorn Kosidphokin (Kasetsart University, Thailand), Phawat Loedtrakunchai (Kasetsart University, Thailand), Natthakorn Sinamnuaiphon (Kasetsart University, Thailand), and Surawit Kuptanon (Kasetsart University, Thailand)</i>	

IDS 6

Advancing Financial Standards Comprehension through Domain-Specific MoE Architecture	73
<i>Pavel Voropaev (Independent) and Anna Detkina (University of Liverpool)</i>	
FinRL Contest 2025 Task 1: Market-Aware In-Context Learning Framework for Proximal Policy Optimization in Stock Trading using DeepSeek	76
<i>Sahar Arshad (National University of Sciences and Technology (NUST), Pakistan), Huma Ameer (National University of Sciences and Technology (NUST), Pakistan), Nikhar Azhar (National University of Sciences and Technology (NUST), Pakistan), and Seemab Latif (National University of Sciences and Technology (NUST), Pakistan)</i>	
Adaptive Confidence-Weighted LLM Infusion for Financial Reinforcement Learning	79
<i>Emran Y. Alturki (Imperial College London), Aydin Javadov (ETH Zürich), Qiyang Sun (Imperial College London), and Björn W. Schuller (Imperial College London; Technical University of Munich)</i>	
Author Index	83