

CV

Dan Pei

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Current Position

Associate Professor, Computer Science Department, Tsinghua University, China.

Research Interests

AIOps (AI Algorithms for Technology Operations, such as IT and Networking).
Time Series Intelligence

Education

2000-2005 **Ph.D.** in Computer Science UCLA. Advisor: Dr. Lixia Zhang
Ph.D. Dissertation “On Resilient Internet Routing”
1997-2000 **M.S.** in Computer Science Tsinghua University, Beijing, China
Advisor: Dr. Dongsheng Wang. Master thesis “Design and
Implementation of Process Migration and Checkpointing in Network of
Workstations”
1992-1997 **B.E.** in Computer Science Tsinghua University, Beijing, China

Working Experience

Dec.2012-Now Associate Professor, Computer Science Department, Tsinghua
University, China. Leading the **Network Management (NetMan)**
research group.
Sept.2005-Apr.2011 Senior Principal Member of Technical Staff - Research, AT&T
Labs - Research

Teaching Experience

- Advanced Network Management (graduate course in English for international students):
 - **Phase II: Time Series Intelligence**
Spring 2024/2025/2026
Feature engineering, similarity and distance, clustering, change point detection, classification, forecasting, anomaly detection, causal discovery and inference, multimodal foundation models
 - **Phase I: AIOps**
Fall 2013/2018/2019/2020; Spring 2015/2016/2017/2018/2021/2022/2023/
AIOps Pipeline: modeling, data measurement, analysis, decision-making, and control.
Algorithms: multimodal anomaly detection, root cause analysis drawing on multiple sources of operational data, including metrics, logs, alerts, and traces.
- Software Engineering (undergraduate course):
Fall 2017/2018/2019/2020; Spring 2021/2022/2023/2024/2025/2026
- Computer Networks (undergraduate course):
Spring 2017/2018

Selected Honors and Awards

- 2025 **IEEE ISSRE 2025 Best Paper Candidate (Research Track)**, Too Many Cooks: Assessing the Need for Multi-Source Data in Microservice Failure Diagnosis. Shenglin Zhang, Xiaoyu Feng, Runzhou Wang, Minghua Ma, Wenwei Gu, Yongqian Sun*, Zedong Jia, Jinrui Sun and **Dan Pei**.
- 2025 **IEEE ISSRE 2025 Best Paper Candidate (Industry Track)**, TShape: Rescuing Machine Learning Models from Complex Shapelet Anomalies. Hang Cui, Jingjing Li, Haotian Si, Quan Zhou, Changhua Pei, Gaogang Xie, **Dan Pei**.
- 2024 **IEEE ISSRE 2024 Best Paper Award (Industry Track)**, Auto-PIP: Real-time Identification of Critical Performance Inflection Points in Software Stress Testing. Shenglin Zhang, Xiao Xiong, Mengyao Li, Yongqian Sun*, Yongxin Zhao, Xia Chen, Bowen Deng and **Dan Pei**.
- 2023 **IEEE ISSRE 2023 Best Paper (Research Track)**, AutoKAD: Empowering KPI Anomaly Detection with Label-Free Deployment. Zhaoyang Yu, Changhua Pei*, Shenglin Zhang, Xidao Wen, Jianhui Li, Gaogang Xie, and **Dan Pei**.
- 2022 **Excellent Teacher Award**, China College Teacher Development Foundation
- 2019 **Teaching Achievement Award of Tsinghua University**, Curriculum Design and Process Quality Management of Software Engineering Practice. Xiaoying Bai, Shanshan Li, Mingjie Li, **Dan Pei**, Yongwei Wu
- 2019 **IEEE ISSRE 2018 Best Paper (Research Track)**, Robust and Rapid Adaption for Concept Drift in Software System Anomaly Detection. Minghua Ma, Shenglin Zhang, **Dan Pei**, Xin Huang, Hongwei Dai
- 2017 **Okawa Foundation Research Grant**, Anomaly Detection through Deep Learning
- 2016 **IEEE/ACM IWQoS 2016 Best Paper Candidate**. “M3: Practical and Reliable Multi-Layer Video Multicast over Multi-Rate Wi-Fi Network” by Menghan Li, **Dan Pei**, Xiaoping Zhang, Beichuan Zhang, Zhi Wang, Hailiang Xu, Zihan Wang
- 2011 **ACM Senior Member** and **IEEE Senior Member**
- 2005 **Outstanding Ph.D. Award**, UCLA Computer Science Department Annual award for best PhD thesis in UCLA Computer Science Department
- 2005 **IEEE ICDCS 2005, Best Paper Award**. “Timer Interactions in Route Flap Damping.” Beichuan Zhang, **Dan Pei**, Daniel Massey and Lixia Zhang.
- 2004 **IBM Ph.D. Fellowship**
“an annual, worldwide competitive program that honors exceptional PhD students in disciplines such as business, chemistry and computer science, as well as emerging technical fields.”
- 2003 **Dimitris N. Chorafas Foundation Award**
“awards scientific prizes worldwide for outstanding research in the engineering sciences, humanities and social sciences, medicine, and the natural sciences”.
- 1999 **Outstanding Junior Researcher Award**
Based on research performance, awarded to top 9 students of all Ph.D. and M.S. students (more than 400 in total) in Computer Science Dept., Tsinghua University.

Founded the CCF OpenAIOps community, featuring an integrated ecosystem of “datasets, models, courses, evaluation benchmark, testbed, and algorithm competitions,” which has attracted **one million unique IP visits from over 100 countries worldwide.**

Graduated Students

A. Post-Docs

1. Kun Wang, Post-Doc 2025, First Job: AIOps Expert at China Southern Power Grid.
2. Kanglin Yin, Post-Doc 2024, First Job: **Assistant Researcher @ China Academy of Science.**
3. Chen Yang, Post-Doc 2023, Jointly sponsored with China National Clearing Center, First Job: Researcher at China National Clearing Center
4. Xidao Wen, Post-Doc 2022, First Job: Researcher at BizSeer; Now Algorithm Engineer at Ali Cloud.
5. Mian Du, Post-Doc 2022, jointly sponsored with China National Clearing Center, First Job: Engineer at Alibaba.
6. Xiaohui Nie, Post-Doc 2021. First Job: Researcher at BizSeer; Now an **Associate Professor at Chinese Academy of Science.**
7. Changhua Pei, Post-Doc 2020, First job: Algorithm Engineer @ Alibaba; Now an **Associate Professor at Chinese Academy of Science.**
8. Jing Zhu, Post-Doc 2020, First job: Algorithm Engineer@ BizSeer; Now a **co-founder of a computer game studio.**

B. Ph.D.

1. Zhenhe Yao, Ph.D. 2025, Dissertation: “Research on Key Technologies for Testing and Operations of Microservice Changes”. First job: Algorithm Engineer at Huawei.
2. Zhaoyang Yu, Ph.D. 2025, Dissertation: “Research on Key Technologies of Large-Scale Time Series Anomaly Detection” (**Outstanding Ph.D. Thesis Award in Beijing**). First job: Algorithm Engineer at ByteDance, with “**Jindouyun**” Honor.
3. Qianyu Ouyang, Ph.D. 2025, Dissertation: “Research on Key Database Technologies for Managing Time Series Data in Intelligent Connected Vehicles”. First job: Quant-Dev Engineer at Sixie Capital.
4. Zeyan Li, Ph.D. 2023, Dissertation: “Intelligent Fault Localization in Online Service Systems”. First job: Algorithm Engineer at ByteDance.
5. Mingjie Li, Ph.D. 2023, Dissertation: “Research on Causal Inference-based Fault Localization and Mitigation for Mobile Internet”. First job: Algorithm Engineer at China Mobile Research Institute, with “**Golden Seed**” honor.
6. Qingyang Yu, Ph.D. 2023, Dissertation: “Research on Failure Detection and Localization for Large-Scale Microservice Systems”. First job: Staff at Finance Department of Hebei Province Government.
7. Haowen Xu, Ph.D. 2022, Dissertation: “Anomaly Detection for Web Applications through Variational Auto-encoder”. First job: **co-founder of a FinTech Startup.**
8. Nengwen Zao, Ph.D. 2022, Dissertation: “Research on Key Technologies for Intelligent Failure Management in Software Services” (**Outstanding Ph.D. Thesis Award in Beijing**). First Job: Algorithm Engineer at Huawei, with “**Young Genius (Tian Cai Shao Nian)**” honor.
9. Wenxiao Chen, Ph.D. 2022, Dissertation: “Anomaly Detection and Root Cause Analysis for Microservice Based on Deep Learning”. First Job: Algorithm Engineer at Huawei, with “**Young Genius (Tian Cai Shao Nian)**” honor.

10. Zhihan Li, Ph.D. 2022. Dissertation: “Hierarchical Anomaly Detection for Large-Scale Time Series Data in Web Services”. Co-advised with Youjian Zhao. First job: Algorithm Engineer at Kuaishou, with **“Kuai Star” honor**.
11. Minghua Ma, Ph.D. 2021, Dissertation: “Anomaly Detection and Diagnosis for Metrics in Cloud Services”. First job: **Researcher at Microsoft Research Asia. Now a researcher in Microsoft Redmond, U.S.**
12. Yuan Meng, Ph.D. 2021, Dissertation: “Anomaly Root Cause Localization for Internet Application Performance”. First job: Post-Doc at Tsinghua University. Now an **Assistant Research Professor at Tsinghua University**.
13. Ya Su, Ph.D. 2021, Dissertation: “Anomaly Detection and Troubleshooting for Web Services in Data Centers”. Co-advised with Youjian Zhao. First job: Algorithm Engineer at Kuaishou, with **“Kuai Star” honor**.
14. Weibin Meng, Ph.D. 2021, **Dissertation**: “Log Anomaly Detection for Data Center Infrastructure”. Co-advised with Ying Liu. First Job: Algorithm Engineer at Huawei, with **“Young Genius (Tian Cai Shao Nian)” honor**.
15. Ping Liu, Ph.D. 2021, Dissertation: “Failure Detection and Root Cause Localization for Web Service Operation”. First job: **Assistant Professor @ Institute of Artificial Intelligence in Sports, Capital University of Physical Education and Sports, China**.
16. Ruming Tang, Ph.D. 2020, Dissertation: “Research on Attack Threat Detection on the Boundaries of Enterprise Networks”. First job: Researcher @ BizSeer.
17. Xiaohui Nie, Ph.D. 2019, Dissertation: “Research on Key Technologies for Improving Single Service Flow Latency in Web Service”. Co-advised with Youjian Zhao. First job: Post-Doc at Tsinghua University.
18. Yongqian Sun, Ph.D. 2018, Dissertation: “Anomaly Detection and Anomaly Localization for Key Performance Indicators in Web Application”. Co-advised with Youjian Zhao. First job: **Assistant Professor @ College of Software, Nankai University, China. Now an Associate Professor @ College of Software, Nankai University**.
19. Shenglin Zhang, Ph.D. 2017, Dissertation: “Improving the Stability of the Datacenter of Web-based Services”, co-advised with Ying Liu. First job: **Assistant Professor @ College of Software, Nankai University, China. Now an Associate Professor @ College of Software, Nankai University**.
20. Mengyu Zhou, Ph.D. 2017, Characterizing Campus Life in the Age of Mobile Internet, co-advised with Thomas Moscibroda. First job: **Researcher at Microsoft Research Asia**.
21. Changhua Pei, Ph.D. 2017, Wi-Fi Performance Measurement and Optimization, co-advised with Youjian Zhao. **First job: Algorithm Engineer, Alibaba**.
22. Guo Chen, Ph.D. 2016. Dissertation: “Optimizing the Consistency of Flow Completion Time in Data Center Networks.” Co-advised with Youjian Zhao. First job: **Researcher @ Microsoft Research Asia, Beijing, China. Now a Full Professor in Computer Science at Hunan University, China**.
23. Dapeng Liu, Ph.D. 2016. Dissertation: “Anomaly Detection and Bottleneck Identification for Performance of Web Applications.” Co-advised with Youjian Zhao. First job: Engineer @ Operations Department of Baidu, Beijing, China.
24. Kaixin Sui, Ph.D. 2016. Dissertation: “Measuring Performance and Trajectory Privacy Risk for Large-scale Wi-Fi Network Management.” Co-advised with Youjian Zhao. First job: Engineer @ Microsoft Azure Networking, Beijing, China.
25. Yaodong Zhang, Ph.D. 2016. Dissertation: “Key techniques of collaborative optimization in autonomous network.” Co-advised with Jian Yuan and Yue Wang. First job: Researcher @ China Aerospace Research Institute II, Beijing, China.
26. Menghan Li, Ph.D. 2016. Dissertation: “Performance Optimization for Video Multicast over Deployed 802.11 Wireless LAN.” Co-advised with Xiaoping Zhang and Ke Xu. First job: Researcher at a research institute in Beijing, China.

27. Jianxun Cao, Ph.D. 2016. Dissertation: “Research on Forwarding Strategy in Content-Centric Networking”. Co-advised with Xiaoping Zhang and Youjian Zhao. First job: Researcher at a research institute in Beijing, China.

C. M.S.

1. Bohan Chen, M.S. 2025, Dissertation: “Key Technology Research on Technical Support Question Answering for IT Operations”. First job: Quantitative Developer at Scientech Research Capital.
2. Guanglei He, M.S. 2024, Dissertation: “Research on Fault Injection based Error Software Change Detection in Microservice Systems”. First job: Algorithm Engineer at Kuaishou.
3. Xianglin Lu, M.S. 2023, Dissertation: “Research on failure localization algorithm of software services”. First job: Engineer at China Development Bank.
4. Xuanrun Wang, M.S. 2023, Dissertation: “Research on Anomaly Detection and Analysis Algorithms for Software Changes”. First job: Algorithm Engineer at a Quantitative Trading Startup.
5. Yiran Cheng, M.S. 2023, Dissertation: “Research on Multidimensional-Data-Oriented Fault Analysis Algorithms”. First job: Algorithm Engineer at Ali Cloud. Now a co-founder of Quant Trading company.
6. Pinnong Li (M.S., Engineer at ByteDance, Silicon Valley)
7. Canhua Wu, M.S. 2022. Thesis: “Research on Failure Localization for Metrics in Software Services”. First job: Engineer at Pony.ai. Now a co-founder of Quant Trading company.
8. Yao Wang, M.S., 2021, Thesis: “Anomaly Detection and Monitoring System Design for Key Performance Indicator”, First job: Engineer at Pony.ai.
9. Fede Zaiter, M.S. 2020, “Log Information Extraction for Anomalous Syslogs”. First job: **founder of an IT company.**
10. Jiahao Bu, M.S. 2019. Thesis: “Anomaly Detection and Diagnosis for Key Performance Indicator of Internet Service”. Co-advised with Ying Liu. First job: Algorithm Engineer @Meituan.
11. Lei Zou, M.S. 2019. Thesis: “Clustering-Based Hotspot Analysis and Alarm Compression for Mobile Internet”. First Job: Entrepreneur.
12. Haibin Li, M.S. 2018. Dissertation: “Detection of User Behavior Anomaly and Masquerade Attack Based on Unsupervised Learning”. First job: **Assistant Professor @ National University of Defense Technology.**
13. Shiwen Cheng, M.S. 2017. Dissertation: “Error Log Clustering of Internet Software”, First job: CTO @ BizSeer; Now a Tech Leader at ByteDance.

D. Bachelor thesis supervised

1. Yifan Zhang, B.E. 2022. First Placement: Engineer at Huawei.
2. Yingzhuo Qian, B.E. 2021. First placement: a Master’s student at NYU.
3. Yilin Li, B.E. 2020. First Placement: going to CMU CS as a Master’s student.
4. Huayi Luo, B.E. 2019. First Placement: an engineer at BizSeer.
5. Minhu Wang, B.E. 2019. First Placement: a Ph.D. student at Tsinghua University.
6. Xingchi Yuan, B.E. 2018. First Placement: an engineer at Google China.
7. Zhelun Wu, B.E. 2016. First Placement: a Ph.D. student at Princeton.
8. Minghan Fu, B.E. 2016. First Placement: a MS student at CMU.
9. Zihan Wang, B.E. 2016. First Placement: a MS student at Tsinghua University.
10. Yuanjun Yao, B.E. 2015. First Placement: a PhD student at Duke.
11. Ken Ling, B.E. 2015. First Placement: a MS student @CMU.
12. Shengjian Jiang, B.E. 2013. First Placement: a MS student at a research institute.
13. Zhaolin Zhang, B.E. 2013. First Placement: a MS student at a research institute.

Current Students

Ph.D.

1. Zhe Xie, Ph.D. student, started 9/2022.
2. Hongbo Shan, Ph.D. student, started 9/2022
3. Longlong Xu, Ph.D. student, started 9/2023.
4. Min Xiang, Ph.D. student, started 9/2024.
5. Zhirui Zhang, Ph.D. student, started 9/2025.
6. Guohua Liu, Ph.D. student, started 9/2025.
7. Yisen Hong, Ph.D. student, started 9/2025.

M.S.

1. Yuhe Liu, M.S. student, started 9/2023.
2. Yuzhuo Yang, M.S. student, started 9/2024.
3. Zijun Dou, M.S. student, started 9/2025.
4. Kosta Gjorgjievski, M.S. student, started 9/2025.

Current Post-Docs

1. Tong Xiao

Research Grants

1. The National Key Research and Development Program of China (No.2024YFB4505903), Fault Prediction, Location and Diagnosis of Cloud-Native System Runtime Based on Intelligent Analysis, 4,000,000RMB =575,840USD, 2024/12/13-2027/11/13.
2. ByteDance, Research Project Cooperation Agreement Based on Large Models for AIOps, 4,500,000 RMB=647,820USD, 2024/12/2-2027/9/1.
3. COSCO Shipping Lines Co. Ltd., AIOps Intelligent Operations Research Project (Phase 1), 4,857,000RMB=699,214USD, 2024/11/15-2025/11/30.
4. ZTE CORPORATION, Multimodal-assisted Temporal Large Model, 1,400,000RMB=201,389USD, 2024/11/25-2025/11/30.
5. Huawei Technology Co. Ltd., Multimodal Fault Large Model - Spatiotemporal Model Technology Cooperation, 1,297,800RMB=186,687USD, 2024/9/9-2025/9/30.
6. Huawei Technology Co. Ltd, Research Project on Fault Detection and Diagnosis Technology Cooperation, 1,225,700RMB=176,316USD, 2024/8/13-2025/8/31.
7. ICBC Industrial and Commercial Bank of China, Intelligent Metric Analysis-Based Vertical Root Cause Localization in Cloud Infrastructure, 480,200RMB=70,014USD, 2025/01/13-2026/01/31.
8. ZTE CORPORATION, CT Network Operation and Maintenance Model, 1,400,000RMB=194,625USD, 2023/10/17-2024/09/30.
9. Tencent, Intelligent Research One-stop Platform Combined with Large Model Research Topic, 500,000RMB=69,509USD, 2023/10/09-2024/12/30.
10. Beijing BizSeer Technological Ltd., Time-Series Foundation Model-Based Metric Analysis, 360,000RMB=52,488USD,2024/06/13-2025/06/15.
11. eBay, Multi-purpose Anomaly Detection Framework, 908,024RMB = 130,000USD. 2023/02/20-2023/12/31.
12. Ali Pay, Function-level Root Cause Location Based on Invocation Data in Microservices, 200,000RMB=29461USD. 2022/11/2-2023/7/28.
13. Lenovo, Proof of Concept, Implementation Pathways, and Working Methodology for Large-Model-Driven Intelligent Operations in Hybrid Cloud, 150,000RMB=21,870USD,2023/03/17-2028/09/01
14. China Mobile, AIOps research for 5G networks, 2,125,200RMB=440,499USD.

- 2021/07/06-2023/07/06.
15. eBay, Multi-purpose Anomaly Detection Framework, 845,000RMB = 130,000USD. 2021/07/01-2022/03/31.
 16. Beijing Sogou Technological Development Ltd., Intelligent Detection of Operations Supervision Indicator Revulsion, 500,000RMB=75,050USD. 2021/05/07-2022/05/06.
 17. NSFC 61472214: A Study on Unsupervised Anomaly Detection and Localization for Microservices Based on Multimodal Monitoring Data. PI. 570,000RMB = 88,236USD. 2021/01/01-2024/12/31.
 18. Shenzhen Securities Communication Co., Ltd., AIOps Scientific Research Project Cooperation Agreement. 890,000RMB= 137,772USD. 2020/8/27-2021/4/30.
 19. Classification of Project, Platform as Service Technologies for High-performance Blockchain-Based Supply Chain. 325,000RMB=45915USD. 2020/7-2023/6.
 20. ICBC Industrial and Commercial Bank of China, The Applied Research in Network Operation Domain for the data Center of ICBC Industrial and Commercial Bank of China. 469,200RMB= 66,299USD. 2020/3/2-2021/3/31.
 21. The National Key Research and Development Program of China, The Core Technology and Theory Platform of Multimodal Intelligence Network. 7,520,000RMB= 1,062,597USD. 2020/1/1-2022/12/31.
 22. Bank of China Limited, The Research and Preliminary Practice of AIOps in Network Operation and Maintenance. 840,000RMB= 118,694USD. 2019/12/30-2020/12/30.
 23. Beijing National Research Center for Information Science and Technology. 1050,000RMB= 162,645USD. 2018/11/12-2021/11/12.
 24. Huawei Technologies Co., Ltd., The Failure Diagnosis Technology of Machine Learning about ADOTP Template Combination Anomaly Detection and ADOTS Template Sequence Anomaly Detection. 1,800,000RMB=254,345USD. 2019/8-2020/8.
 25. Huawei Technologies Co., Ltd., The Failure Delimitation and Location Technology of Machine Learning based on NLP Massive Log Data Multidimensional Data Feature Analysis. 900,000RMB=127,173USD. 2018/7-2019/7.
 26. VMware Principle Engineer Grant, 20,000USD.
 27. Tencent, Analytical Model of Game Users' Experience/ KPI Cluster/ Algorithm Selection of Anomaly Detection. 500,000RMB=76,081USD. 2017/07-2018/06.
 28. Beijing Taobao Science and Technology Ltd., Anomaly Detection of Operational Indicator (GOC) /Fault Detection of Database (CloudDBA). 450,000RMB=68,479USD. 2017/01-2018/01.
 29. Shenzhen Qianhai Weizhong Bank Corporation Ltd., AI for Operations of Weizhong Bank, 500,000RMB=76,081USD. 2017/11-2018/09.
 30. Intelligent Detection of Operations Supervision Indicator Revulsion, Beijing Sogou technological development Ltd., 56, 0000RMB=85,159USD. 2017/02-2018/01.
 31. NSFC 61472214: OpsRobot (Network & Service Operations Robot). PI. 860,000RMB = 129,073USD. 01/01/2015 to 31/12/2018.
 32. NSFC 61472210: Cooperative Performance Improvement among Autonomous Wi-Fi Networks. PI. 860,000RMB = 129,073USD. 01/01/2015 to 31/12/2018.
 33. 973 Program 2013CB329105: Complex Network Behavior and Its Gaming Theory Perspective. PI 1,284,000RMB = 192,709USD. 01/01/2013 to 31/12/2016.
 34. NSFC Key Program 61233007: Networking Protocols for Smart Grid. Co-PI. 860,000RMB = 129,073USD. 01/01/2013 to 31/12/2017.
 35. Tsinghua National Laboratory for Information Science and Technology key projects: WiFi Union. PI. 500,000RMB = 75,042USD. 01/01/2015 to 31/12/2016.
 36. Global Talent Recruitment (Youth) Program. SmoothApp: App Performance Management through Big Data Analytics. PI. 2,000,000RMB = 300,170 USD. 01/07/2015 to 31/06/2018.
 37. The Research Institute of Petro China. Project: Key Technologies for Application

Correlation and Robustness. PI. 1,170,000RMB = 175,599USD. 01/01/2015 to 31/12/2015.

Invited Talks

1. Invited Talk, May 29th, 2021: Towards Autonomous IT Operations through Artificial Intelligence, ICSE 2021 Workshop on Cloud Intelligence In conjunction with the 43rd International Conference on Software Engineering (<https://cloudintelligenceworkshop.org/2021/program.html>)
2. Keynote talk, Dec. 2020 “Towards Autonomous IT Operations through Artificial Intelligence” the International Workshop on Artificial Intelligence for IT Operations (AIOPS) 2020 (<https://aiopsworkshop.github.io/index.html>)
3. Colloquium talk at Computer Science and Engineering Department at UC Riverside, Oct. 2019. “Towards Autonomous IT Operations through Machine Learning”.
4. Colloquium talk at Computer Science Department at NJIT, 2009. “Network Aware Forward Caching”.
5. Colloquium talk at Computer Science Department at University of Memphis, 2008. “Scalable VPN Routing via Relaying”.
6. Colloquium talk at Computer Science Department at Lehigh University, 2007. “A Light-Weight Distributed Scheme for Detecting IP Prefix Hijacks in Realtime”.

Invited Papers

1. “Intelligent Operations through Machine Learning” (基于机器学习的智能运维) in Chinese, in Communications of the CCF (China Computer Confederation), a monthly magazine (similar to IEEE communications Magazine), published by China Computer Confederation, the organization of 60000+ Chinese computer professionals and researchers. **Dan Pei**, Shenglin Zhang, Changhua Pei.
2. “Intelligent Operations in the Era of Large Language Models” (大语言模型时代的智能运维) in Chinese, **Dan Pei**, Shenglin Zhang, Yongqian Sun, and Changhua Pei. ZTE Technology Journal, 2024, 30(2): 56–62.

Panels

1. Panelist, May 29th, 2021: How to accelerate collaboration on Cloud Intelligence across academia and industry? ICSE 21 Workshop on Cloud Intelligence, In conjunction with the 43rd International Conference on Software Engineering (<https://cloudintelligenceworkshop.org/2021/program.html>)
2. Research Panelist, empower / PAWR Project Office / acm sigcomm the Networking Channel, May 19th 2021, Emerging Trends in AI/ML and Implications for Networking Research (<https://networkingchannel.eu/emerging-trends-in-ai-ml-and-implications-for-networking-research/>)
3. Panelist, ML meets Networking, APNet 2019
4. Panelist, IEEE ICC 2019 RAFNET Workshop Panel on ICN.

Publication Summary

- Published **more than 200 papers** in conferences/journals in Networking, AI, Software Engineering, Security, and other fields, such as SIGCOMM, Transactions on Networking (TON), JSAC, TOSEM, TSC, ICLR, ICML, SIGMETRICS, IMC, CoNEXT, INFOCOM, ICNP, WWW, UbiComp, MobiSys, USENIX Security, USENIX ATC, KDD, IJCAI, FSE, ASE, ICSE, VLDB, *etc.*
- Google Scholar Citation count is more than **16k** by Mar. 2026. **H-Index: 60**
- 13 China patents (issued) and 24 US patents (issued).
- ORCID: 0000-0002-5113-838X
- Scopus ID: 7102806576
- E-versions since 2014 (with slides) are available at: <http://netman.aiops.org/publications/>
- All E-versions are available at: http://scholar.google.com/citations?hl=en&user=i_zA1VsAAAAJ&view_op=list_works&sortby=pubdate

Journal, magazine, conference and workshop publications

2026

- Eagle: Leveraging Operations Documents for Comprehensive Benchmark Question Generation. Yuhe Liu, Changhua Pei, Hang Wang, Longlong Xu, Xiaogang Dong, Zhen Feng, Li Zheng, Kehang Ji, **Dan Pei***. ACM International Conference on the Foundations of Software Engineering Industry Track (**FSE-Industry 2026**), Montreal, Canada, June 2026. (CCF A).
- Bridging the Delay: Lag-Aware Spatio-Temporal Causal Inference for Microservice Root Cause Analysis. Shenglin Zhang, Junhua Kuang, Yimeng Zhang, Sibao Xia, Jintao Feng, Jingyu Wang, Wenwei Gu, Yongqian Sun*, Wei Li, Liping Zhang, **Dan Pei**. ACM International Conference on the Foundations of Software Engineering Industry Track (**FSE-Industry 2026**), Montreal, Canada, June 2026. (CCF A).
- Smart Eye: LLM-Guided Proposer–Verifier Framework for Industrial-Scale Log Anomaly Detection. Changhua Pei, Hang Cui, Jingjing Li, Yuxuan Li, Zihan Liu, Xinyuan Liao, Cenjie Hu, Jiabao Wang, Zheyuan Li, Zexin Wang, Haotian Si, Ke Xiang, Gaogang Xie, **Dan Pei**. **WWW 2026**, Dubai, UAE, Apr 13, 2026 – Apr 17, 2026 (CCF A)
- ViTs: Teaching Machines to See Time Series Anomalies Like Human Experts. Zexin Wang, Changhua Pei, Yang Liu, Hengyue Jiang, Quan Zhou, Haotian Si, Hang Cui, Jianhui Li, Gaogang Xie, Jingjing Li, **Dan Pei**. **WWW 2026**, Dubai, UAE, Apr 13, 2026 – Apr 17, 2026 (CCF A)
- AutoDA-Timeseries: Automated Data Augmentation for Time Series. Zijun Dou, Zhenhe Yao, Zhe Xie, Xidao Wen, Tong Xiao, **Dan Pei**. The 14th International Conference on Learning Representation (**ICLR 2026**) (CCF A)
- PerfScout: An Adaptive Workload Generator in Software Performance Testing. Yongqian Sun, Qingliang Zhang, Xiao Xiong, Mengyao Li, Yimin Zuo, Shenglin Zhang*, Xidao Wen, Wenwei Gu, Huandong Zhuang, Bowen Deng, Ruiyuan Wan, **Dan Pei**. IEEE/ACM International Conference on Software Engineering (**ICSE2026-SEIP**), Rio de Janeiro, Brazil, April 12-18, 2026. (CCF A)
- When LLMs Listen to Experts: Accurate Failure Diagnosis in Operating Systems.

Yongxin Zhao, Shenglin Zhang*, Yuxin Sun, Wenwei Gu, Yongqian Sun, Luping Wang, Li Shi, Cheng Huang, Guodong Yang, Liping Zhang, **Dan Pei**. In Proceedings of the IEEE/ACM 48th International Conference on Software Engineering (**ICSE2026-SEIP**), Rio de Janeiro, Brazil, April 12-18, 2026. (CCF A)

FoundRoot: Towards Foundation Model for Root Cause Analysis via Structured Deep Thinking. Zhe Xie&, Zeyan Li, Xiao He, Shenglin Zhang, Longlong Xu&, Yuzhuo Yang, Tieying Zhang*, Jianjun Chen, Rui Shi, **Dan Pei**. The 48th IEEE/ACM International Conference on Software Engineering (**ICSE 2026**) (CCF A)

DIVER: A Robust Text-to-SQL System with Dynamic Interactive Value Linking and Evidence Reasoning. Yafeng Nan, Zirui Zhuang, Qi, Guojun Chu, Jianxin Liao, **Dan Pei**, Jingyu Wang*. **SIGMOD2026**, Bengaluru, India, on May 31 – June 05, 2026. (CCF A)

2025

A Comprehensive Benchmark and Empirical Study of Trace Anomaly Detection. Yongqian Sun, Minyi Shao, Xiaohui Nie*, Kaiwen Yang, Xingda Li, Bowen Hao, Shenglin Zhang, Changhua Pei, Dongbiao He, Yanbiao Li, **Dan Pei**. IEEE Transactions on Services Computing (**TSC 2025**), DOI: 10.1109/TSC.2025.3622122, 2025. (CCF A)

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