



Proceedings of the VLDB Endowment

Volume 18, No. 9 – May 2025

Editors in Chief:

Themis Palpanas and Nesime Tatbul

Associate Editors:

Walid G. Aref, Manos Athanassoulis, Carsten Binnig, Spyros Blanas, Matthias Boehm, Angela Bonifati, K. Selcuk Candan, Lei Cao, Raul Castro Fernandez, Lei Chen, Shimin Chen, Yi Chen, Reynold Cheng, Alvin Cheung, Sudipto Das, Niv Dayan, Antonis Deligiannakis, Jens Dittrich, Xin Luna Dong, Karima Echihabi, Alan Fekete, Avrilia Floratou, Jana Giceva, Katja Hose, H. V. Jagadish, Panos Kalnis, Georgia Koutrika, Eric Lo, Nikos Mamoulis, Stefan Manegold, Ioana Manolescu, Norman May, Umar Farooq Minhas, Fatemeh Nargesian, Beng Chin Ooi, Fatma Ozcan, Tamer Ozsu, Tilmann Rabl, Mirek Riedewald, Jennie Rogers, Alkis Simitsis, Letizia Tanca, Nan Tang, Yuanyuan Tian, Yongxin Tong, Pinar Tozun, Yannis Velegrakis, Matthias Weidlich, Steven E. Whang, Raymond Chi-Wing Wong

Publication Editors:

Xiaoou Ding, Subhadeep Sarkar, Giovanni Simonini

PVLDB – Proceedings of the VLDB Endowment

Volume 18, No. 9, May 2025.

All papers published in this issue will be presented at the 51st International Conference on Very Large Data Bases, London, United Kingdom, 2025.

Copyright 2025 VLDB Endowment

This work is licensed under the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-nd/4.0/>. For any use beyond those covered by this license, obtain permission by emailing info@vldb.org.

Volume 18, Number 9, May 2025

Pages i – ix and 2761-3242

ISSN 2150-8097

Available at: <http://www.pvldb.org> and <https://dl.acm.org/journal/pvldb>

TABLE OF CONTENTS

Front Matter

Copyright Notice	i
Table of Contents	ii
PVLDB Organization and Review Board – Vol. 18	v

Research Papers

Concurrency Control as a Service	2761
Weixing Zhou, Yanfeng Zhang, Xinji Zhou, Zhiyou Wang, Zeshun Peng, Yang Ren, Sihao Li, Huanchen Zhang, Guoliang Li, Ge Yu	
TAB: Unified Benchmarking of Time Series Anomaly Detection Methods.....	2775
Xiangfei Qiu, Zhe Li, Wanghui Qiu, Shiyan Hu, Lekui Zhou, Xingjian Wu, Zhengyu Li, Chenjuan Guo, Aoying Zhou, Zhenli Sheng, Jilin Hu, Christian S. Jensen, Bin Yang	
Heta: Distributed Training of Heterogeneous Graph Neural Networks	2790
Yuchen Zhong, Junwei Su, Chuan Wu, Minjie Wang	
The UDFBench Benchmark for General-purpose UDF Queries	2804
Yannis Foufoulas, Theoni Palaologou, Alkis Simitsis	
eXpath: Explaining Knowledge Graph Link Prediction with Ontological Closed Path Rules	2818
Ye Sun, Lei Shi, Yongxin Tong	
The LAW theorem: Local Reads and Linearizable Asynchronous Replication	2831
Emmanouil Giortamis, Antonios Katsarakis, Vasilis Gavrielatos, Pramod Bhatotia, Aleksandar Dragojevic, Boris Grot, Vijay Nagarajan, Panagiota Fatourou	
Using Read Promotion and Mixed Isolation Levels for Performant Yet Serializable Execution of Transaction Programs	2846
Brecht Vandevoort, Alan Fekete, Bas Ketsman, Frank Neven, Stijn Vansummeren	
Locality-Aware Cache Replacement Policy for Graph Traversals	2859
Zeynep Korkmaz, Tamer Özsu, Khuzaima Daudjee	
Keigo: Co-designing Log-Structured Merge Key-Value Stores with a Non-Volatile, Concurrency-aware Storage Hierarchy	2872
Rúben Adão, Zhongjie Wu, Changjun Zhou, Oana Balmau, João Paulo, Ricardo Macedo	
Why Are Learned Indexes So Effective but Sometimes Ineffective?	2886
Qiyu Liu, Siyuan Han, Yanlin Qi, Jingshu Peng, Jin Li, Longlong Lin, Lei Chen	
Still More Shades of Null: An Evaluation Suite for Responsible Missing Value Imputation [Experiment, Analysis and Benchmark]	2899
Falaah Arif Khan, Denys Herasymuk, Nazar Protsiv, Julia Stoyanovich	
OpenForge: Probabilistic Metadata Integration.....	2914
Tianji Cong, Fatemeh Nargesian, Junjie Xing, H. V. Jagadish	
Maximum k-Plex Finding: Choices of Pruning Techniques Matter!.....	2928
Akhlaque Ahmad, Da Yan, Xiao Chen, Lyuheng Yuan, Qin Zhang, Saugat Adhikari	

A Comprehensive Survey and Experimental Study of Learning-based Community Search.....	2941
Xiaoxuan Gou, Weiguo Zheng, Yuxiang Wang, Xiaoliang Xu, Zhiyuan Yu	
Decentralized Actor Scheduling and Reference-based Storage in Xorbits: a Native Scalable Data Science Engine	2955
Weizheng Lu, Chao Hui, Yunhai Wang, Feng Zhang, Yueguo Chen, Bao Liu, Chengjie Li, Zhaoxin Wu, Xuye Qin	
STsCache: An Efficient Semantic Caching Scheme for Time-series Data Workloads Based on Hybrid Storage	2964
Tao Kong, Hui Li, Yuxuan Zhao, Liping Li, Xiyue Gao, Qilong Wu, Jiangtao Cui	
Cache Coherence Over Disaggregated Memory	2978
Ruihong Wang, Jianguo Wang, Walid Aref	
Triparts: Scalable Streaming Graph Partitioning to Enhance Community Structure	2992
Ruchi Bhoot, Tuhin Khare, Manoj Agarwal, Siddharth Jaiswal, Yogesh Simmhan	
The LDBC Financial Benchmark: Transaction Workload	3007
Shipeng Qi, Bing Tong, Jiatao Hu, Heng Lin, Yue Pang, Wei Yuan, Songlin Lyu, Zhihui Guo, Ke Huang, Xujin Ba, Qiang Yin, Youren Shen, Yan Zhou, Tao Lv, Jia Li, Lei Zou, Yongwei Wu, Gábor Szárnyas, Xiaowei Zhu, Wenguang Chen, Chuntao Hong	
Alchemy: A Query Optimization Framework for Oblivious SQL	3021
Donghyun Sohn, Kelly Jiang, Nicolas Hammer, Jennie Rogers	
DocETL: Agentic Query Rewriting and Evaluation for Complex Document Processing.....	3035
Shreya Shankar, Tristan Chambers, Tarak Shah, Aditya Parameswaran, Eugene Wu	
HAKES: Scalable Vector Database for Embedding Search Service	3049
Guoyu Hu, Shaofeng Cai, Anh Dinh, Zhongle Xie, Cong Yue, Gang Chen, Beng Chin Ooi	
Path-centric Cardinality Estimation for Subgraph Matching.....	3063
Zhengdong Wang, Qiang Yin, Longbin Lai	
A Comprehensive Study of Shapley Value in Data Analytics.....	3077
Hong Lin, Shixin Wan, Zhongle Xie, Ke Chen, Meihui Zhang, Lidan Shou, Gang Chen	
Effective and Efficient Distributed Temporal Graph Learning through Hotspot Memory Sharing	3093
Longjiao Zhang, Rui Wang, Tongya Zheng, Ziqi Huang, Wenjie Huang, Xinyu Wang, Can Wang, Mingli Song, Sai Wu, Shuiping He	
Stochastic SketchRefine: Scaling In-Database Decision-Making under Uncertainty to Millions of Tuples	3106
Riddho Ridwanul Haque, Anh Mai, Matteo Brucato, Azza Abouzied, Peter Haas, Alexandra Meliou	
CXL Memory Performance for In-Memory Data Processing.....	3119
Marcel Weisgut, Daniel Ritter, Pinar Tözün, Lawrence Benson, Tilmann Rabl	
LLMLog: Advanced Log Template Generation via LLM-driven Multi-Round Annotation	3134
Fei Teng, Haoyang Li, Lei Chen	
Cuckoo Heavy Keeper and the balancing act of maintaining heavy hitters in stream processing	3149
Vinh Ngo, Marina Papatriantafilou	

Rebirth-Retire: A Concurrency Control Protocol Adaptable to Different Levels of Contention	3162
Qian Zhang, Yiwen Xiang, Jianhao Wei, Yang Yang, Yifan Li, Xueqing Gong, Wanggen Liu	
\textsc{Ufgtime}: Mining Intertwined Dependencies in Multivariate Time Series via an Efficient Pure Graph Approach (Flavor: Foundations and Algorithms Papers)	3175
Ruikun Li, Dai Shi, Ye Xiao, Junbin Gao	
ArrayMorph: Optimizing Hyperslab Queries on the Cloud for Machine Learning Pipelines	3189
Ruochen Jiang, Spyros Blanas	
Inference-friendly Graph Compression for Graph Neural Networks.....	3203
Yangxin Fan, Haolai Che, Yinghui Wu	
GpJSON: High-performance JSON Data Processing on GPUs.....	3216
Sacheendra Talluri, Guido Walter Di Donato, Luca Danelutti, Koen Vlaswinkel, Marco Arnaboldi, Arnaud Delamare, Marco Domenico Santambrogio, Daniele Bonetta	
Beyond Shortest Paths: Node Fairness in Route Recommendation.....	3230
Antonio Ferrara, David Garcia-Soriano, Francesco Bonchi	

PVLDB ORGANIZATION AND REVIEW BOARD - Vol. 18

Editors in Chief of PVLDB

Themis Palpanas (University Paris Cite)
Nesime Tatbul (Intel Labs and MIT)

Associate Editors of PVLDB

Walid G. Aref (Purdue University)
Manos Athanassoulis (Boston University)
Carsten Binnig (Technical University of Darmstadt)
Spyros Blanas (Ohio State University)
Matthias Boehm (Technical University of Berlin)
Angela Bonifati (University of Lille)
K. Selcuk Candan (Arizona State University)
Lei Cao (University of Arizona)
Raul Castro Fernandez (University of Chicago)
Lei Chen (Hong Kong University of Science and Technology)
Shimin Chen (Chinese Academy of Sciences)
Yi Chen (New Jersey Institute of Technology)
Reynold Cheng (University of Hong Kong)
Alvin Cheung, University of California (Berkeley)
Sudipto Das (Amazon Web Services)
Niv Dayan (University of Toronto)
Antonis Deligiannakis (Technical University of Crete)
Jens Dittrich (Saarland University)
Xin Luna Dong (Meta)
Karima Echiabi (Mohammed VI Polytechnic University)
Alan Fekete (University of Sydney)
Avrilia Floratou (Microsoft)
Jana Giceva (Technical University of Munich)
Katja Hose (Technical University of Vienna)
H. V. Jagadish (University of Michigan)
Panos Kalnis (King Abdullah University of Science and Technology)
Georgia Koutrika (Athena Research Center)
Eric Lo (Chinese University of Hong Kong)
Nikos Mamoulis (University of Ioannina)
Stefan Manegold (CWI)
Ioana Manolescu (Inria and Polytechnic Institute of Paris)
Norman May (SAP SE)
Umar Farooq Minhas (Apple)
Fatemeh Nargesian (University of Rochester)
Beng Chin Ooi (National University of Singapore)
Fatma Ozcan (Google)
Tamer Ozsu (University of Waterloo)
Tilman Rabl (Hasso Plattner Institute and University of Potsdam)
Mirek Riedewald (Northeastern University)
Jennie Rogers (Northwestern University)
Alkis Simitsis (Athena Research Center)
Letizia Tanca (Polytechnic University of Milan)
Nan Tang (Hong Kong University of Science and Technology (GZ))
Yuanyuan Tian (Microsoft)
Yongxin Tong (Beihang University)
Pinar Tozun (IT University of Copenhagen)

Yannis Velegrakis (Utrecht University)
Matthias Weidlich (Humboldt University of Berlin)
Steven E. Whang (Korea Advanced Institute of Science and Technology)
Raymond Chi-Wing Wong (Hong Kong University of Science and Technology)

Publication Editors

Xiaoou Ding (Harbin Institute of Technology)
Subhadeep Sarkar (Brandeis University)
Giovanni Simonini (University of Modena and Reggio Emilia)

PVLDB Managing Editor

Jun Yang (Duke University)

PVLDB Advisory Board

Sourav S. Bhowmick (Nanyang Technological University)
Vanessa Braganholo (Universidade Federal Fluminense)
Lei Chen (Hong Kong University of Science and Technology)
Yanlei Diao (Ecole Polytechnique)
Xin Luna Dong (Meta)
Torsten Grust (University of Tuebingen)
Wolfgang Lehner (TU Dresden)
Alexandra Meliou (University of Massachusetts Amherst)
Felix Naumann (HPI)
Fatma Ozcan (Google)
Themis Palpanas (Universite Paris Cite)
Divesh Srivastava (AT&T Labs - Research)
Nesime Tatbul (Intel Labs and MIT)
Xiaokui Xiao (National University of Singapore)
Meihui Zhang (Beijing Institute of Technology)

Review Board

Ahmed S. Abdelhamid (Purdue University)
Ziawasch Abedjan (TU Berlin)
Ahmed Aly (Google)
Mohammad Javad Amiri (Stony Brook University)
Yael Amsterdamer (Bar-Ilan University)
Renzo Angles (Universidad de Talca)
Alexander Artikis (University of Piraeus)
Joy Arulraj (Georgia Tech)
Abolfazl Asudeh (University of Illinois Chicago)
Maurizio Atzori (University of Cagliari)
Nikolaus Augsten (University of Salzburg)
Zhifeng Bao (MIT University)
Ilaria Bartolini (University of Bologna)
Johes Bater (Tufts University)
Lawrence Benson (HPI and University of Potsdam)
Sonia Bergamaschi (University of Modena and Reggio Emilia)
Anna Bernasconi (Politecnico di Milano)
Arnab Bhattacharya (IIT Kanpur)
Alexander Boehm (SAP SE)
Paul Boniol (Universite de Paris)
Renata Borovica-Gajic (University of Melbourne)
Panagiotis Bouras (Johannes Gutenberg University Mainz)
Vanessa Braganholo (Fluminense Federal University)
Matteo Brucato (Microsoft Research)
Michael J. Cahill (University of Sydney)
Diego Calvanese (Free University of Bozen Bolzano)
Jesus Camacho-Rodriguez (Microsoft)
Helena Caminal (Google)
Huiping Cao (New Mexico State University)
Yang Cao (University of Edinburgh)
Zhao Cao (Huawei Technologies)
Zhichao Cao (Arizona State University)
Matteo Ceccarello (University of Padova)
Chengliang Chai (Beijing Institute of Technology)
Yunpeng Chai (Renmin University of China)
Harry Kai-Ho Chan (The University of Sheffield)
Tsz Nam Chan (Shenzhen University)
Subarna Chatterjee (Harvard University)
Cindy Chen (University of Massachusetts Lowell)
Lu Chen (Zhejiang University)
Hong Cheng (The Chinese University of Hong Kong)
Rada Chirkova (NC State University)
Theodoros Chondrogiannis (University of Konstanz)
Shihabur Chowdhury (Apple)
George Christodoulou (TU Delft)
Periklis Chrysogelos (Oracle)
Gao Cong (Nanyang Technological University)
Alex Conway (Cornell Tech)
Andrew Crotty (Northwestern University)
Bin Cui (Peking University)
Patrick Damme (TU Berlin)
Roshan Dathathri (Microsoft Research)
Jesse Davis (MongoDB)
Cagatay Demiralp (MIT)
Dong Deng (Rutgers University New Brunswick)
Laxman Dhulipala (University of Maryland, College Park)

Shimin Di (The Hong Kong University of Science and Technology)
Claudia Diamantini (Universita Politecnica delle Marche)
Anton Dignos (Free University of Bozen Bolzano)
Bailu Ding (Microsoft Research)
Bolin Ding (Alibaba Group)
Jialin Ding (Amazon Web Services)
Anh Dinh (Deakin University)
AnHai Doan (University of Wisconsin Madison)
Christos Doulkeridis (University of Piraeus)
Stefania Dumbrava (ENSIIE)
Ahmed Eldawy (University of California Riverside)
Mohamed Eltabakh (Qatar Foundation)
Venkatesh Emani (Microsoft)
Ju Fan (Renmin University of China)
Zhiwei Fan (Meta)
Yixiang Fang (The Chinese University of Hong Kong)
Anna Fariha (University of Utah)
Ziqiang Feng (Google)
Hakan Ferhatosmanoglu (University of Warwick and Amazon Web Services)
Elena Ferrari (University of Insubria)
Donatella Firmani (Sapienza University)
Peter M. Fischer (University of Augsburg)
George Fletcher (Eindhoven University of Technology)
Juliana Freire (New York University)
Sainyam Galhotra (Cornell University)
Johann Gamper (Free University of Bozen Bolzano)
Yunjun Gao (Zhejiang University)
Paolo Garza (Politecnico di Torino)
Chang Ge (University of Minnesota)
Tingjian Ge (University of Massachusetts Lowell)
Rainer Gemulla (Universitat Mannheim)
Nikos Giatrakos (Technical University of Crete)
Aristides Gionis (KTH Royal Institute of Technology)
Boris Glavic (Illinois Institute of Technology)
Lukasz Golab (University of Waterloo)
Jonathan Goldstein (Microsoft)
Sven Groppe (Universitat zu Lubek)
Michael Grossniklaus (University of Konstanz)
Anja Gruenheid (Microsoft)
Le Gruenwald (The University of Oklahoma)
Vincenzo Gulisano (Chalmers University of Technology)
Rihan Hai (TU Delft)
Wook-Shin Han (POSTECH)
Mohamed S. Hassan (Oracle)
Oktie Hassanzadeh (IBM Research)
Wenjia He (University of Michigan)
Xi He (University of Waterloo)
Yeye He (Microsoft Research)
Meichun Hsu (Oracle)
Haibo Hu (The Hong Kong Polytechnic University)
Xiao Hu (University of Waterloo)
Qiang Huang (National University of Singapore)
Xin Huang (Hong Kong Baptist University)
Yan Huang (University of North Texas)
Zi Helen Huang (University of Queensland)
Madelon Hulsebos (University of California Berkeley)
Romain Ilbert (Huawei Paris Research Center)
Matteo Interlandi (Microsoft)

Ekaterini Ioanou (Tilburg University)
 Gabriela Jacques-Silva (Facebook)
 Fuad Jamour (Amazon Web Services)
 Soren Kejser Jensen (Aalborg University)
 Peiquan Jin (University of Science and Technology of China)
 Alekh Jindal (SmartApps)
 Hyungsoo Jung (Seoul National University)
 Vasiliki Kalavri (Boston University)
 Vana Kalogeraki (Athens University of Economics and Business)
 Eser Kandogan (Megagon Labs)
 Daniel Kang (UIUC)
 Zoi Kaoudi (IT University of Copenhagen)
 Pinar Karagoz (Middle East Technical University (METU))
 Bojan Karlas (Harvard University)
 Asterios Katsifodimos (TU Delft)
 Oliver A. Kennedy (University at Buffalo SUNY)
 Arijit Khan (Aalborg University)
 Guy Khazma (University of Toronto)
 Haridimos Kondylakis (FORTH-ICS)
 Arnd Christian Konig (Microsoft)
 Chrysanthi Kosyfaki (The University of Hong Kong)
 Nick Koudas (University of Toronto)
 Paraschos Koutris (University of Wisconsin Madison)
 Mayuresh Kunjir (Amazon Web Services)
 Alexandros Labrinidis (University of Pittsburgh)
 Wolfgang Lehner (TU Dresden)
 Chuan Lei (Amazon Web Services)
 Viktor Leis (TU Munich)
 Alberto Lerner (University of Fribourg)
 Ulf Leser (Humboldt-Universitat zu Berlin)
 Guoliang Li (Tsinghua University)
 Jia Li (The Hong Kong University of Science and Technology (GZ))
 Jianxin Li (Deakin University)
 Tian Li (Carnegie Mellon University)
 Tianyu Li (MIT)
 Yinan Li (Microsoft Research)
 Yuchen Li (Singapore Management University)
 Xiang Lian (Kent State University)
 Shen Liang (Universite Paris Cite)
 Michele Linardi (CYU)
 Matteo Lissandrini (University of Verona)
 Chunwei Liu (MIT)
 Jinfei Liu (Zhejiang University)
 Xueli Liu (Tianjin University)
 Cheng Long (Nanyang Technological University)
 Baotong Lu (Microsoft Research)
 Jiaheng Lu (University of Helsinki)
 Siqiang Luo (Nanyang Technological University)
 Yuyu Luo (The Hong Kong University of Science and Technology (GZ))
 Manisha Luthra (TU Darmstadt)
 Joana M. F. da Trindade (MIT)
 Chenhao Ma (The Chinese University of Hong Kong)
 Lin Ma (University of Michigan)
 Amr Magdy (University of California Riverside)
 Ahmed Mahmood (Google)
 Sujaya Maiyya (University of Waterloo)

Neha Makhija (Northeastern University)
 Silviu Maniu (Universite Grenoble Alpes)
 Essam Mansour (Concordia University)
 Ryan Marcus (University of Pennsylvania)
 Amelie Marian (Rutgers University)
 Davide Martinenghi (Politecnico di Milano)
 Venkata Vamsikrishna Meduri (IBM Research - Almaden)
 Sharad Mehrotra (University of California Irvine)
 Alexandra Meliou (University of Massachusetts Amherst)
 Paolo Merialdo (Universita degli Studi Roma Tre)
 Amine Mhedhbi (Polytechnique Montreal)
 Xiaoye Miao (Zhejiang University)
 Sebastian Michel (RPTU Kaiserslautern Landau)
 Katsiaryna Mirylenka (IBM Research Zurich)
 Madhulika Mohanty (Inria Saclay)
 Mohamed Mokbel (University of Minnesota Twin Cities)
 Mirella M. Moro (Universidade Federal de Minas Gerais)
 Davide Mottin (Aarhus University)
 Kyriakos Mouratidis (Singapore Management University)
 Ingo Müller (Google)
 Balakrishnan Narayanaswamy (Amazon)
 Mario Nascimento (Northeastern University)
 Parimarjan Negi (MIT)
 Quoc Viet Hung Nguyen (Griffith University)
 Milos Nikolic (University of Edinburgh)
 Matthaïos Olma (MongoDB)
 Prashant Pandey (University of Utah)
 George Papadakis (University of Athens)
 Dimitris Papadias (The Hong Kong University of Science and Technology)
 Odysseas Papapetrou (TU Eindhoven)
 John Paparrizos (The Ohio State University)
 George Papastefanatos (ATHENA Research Center)
 Stefano Paraboschi (Universita degli Studi di Bergamo)
 Aditya Parameswaran (University of California Berkeley)
 Yongjoo Park (UIUC)
 Eliana Pastor (Politecnico di Torino)
 Jignesh Patel (Carnegie Mellon University)
 Marco Patella (University of Bologna)
 Torben Bach Pedersen (Aalborg University)
 Botao Peng (Chinese Academy of Sciences)
 Peng Peng (Hunan University)
 Matthew J. Perron (MIT)
 Ilia Petrov (Reutlingen University)
 Holger Pirk (Imperial College)
 Stefan Plantikow (Neo4j)
 Orestis Polychroniou (Amazon)
 Danica Porobic (Oracle)
 Abdulhakim Qahtan (Utrecht University)
 Abdul Quamar (Google)
 Weixiong Rao (Tongji University)
 Berthold Reinwald (IBM Research Almaden)
 El Kindi Rezig (MIT)
 Daniel Ritter (SAP)
 Oscar Romero (Universitat Politecnica de Catalunya)
 Kexin Rong (Georgia Institute of Technology)
 Abhishek Roy (Snowflake)

Florin Rusu (University of California Merced)
 Sourav S. Bhowmick (Nanyang Technological University)
 Ibrahim Sabek (University of Southern California)
 Mohammad Sadoghi (University of California Davis)
 Semih Salihoglu (University of Waterloo)
 Maria Luisa Sapino (University of Torino)
 Subhadeep Sarkar (Brandeis University)
 Kai-Uwe Sattler (TU Ilmenau)
 Patrick Schafer (Humboldt-Universitat zu Berlin)
 Felix M. Schuhknecht (Johannes Gutenberg University Mainz)
 Maximilian E. Schule (University of Bamberg)
 Malte Schwarzkopf (Brown University)
 Rathijit Sen (Microsoft)
 Jiwon Seo (Seoul National University)
 Juan Sequeda (data.world)
 Marco Serafini (University of Massachusetts Amherst)
 Amir Shaikhha (University of Edinburgh)
 Shantanu Sharma (New Jersey Institute of Technology)
 Yanyan Shen (Shanghai Jiao Tong University)
 Jieming Shi (The Hong Kong Polytechnic University)
 Roei Shraga (WPI)
 Tarique Siddiqui (Microsoft Research)
 Giovanni Simonini (University of Modena and Reggio Emilia)
 Utku Sirin (Harvard University)
 Spiros Skiadopoulos (University of the Peloponnese)
 Dimitrios Skoutas (Athena Research Center)
 Shaoxu Song (Tsinghua University)
 Divesh Srivastava (AT&T Chief Data Office)
 Chrysoula Stathakopoulou (Chainlink Labs)
 Kostas Stefanidis (Tampere University)
 Kurt Stockinger (ZHAW Zurich University of Applied Sciences)
 Uta Storl (University of Hagen)
 Shixuan Sun (Shanghai Jiao Tong University)
 Ki Hyun Tae (KAIST)
 Dixin Tang (University of Texas Austin)
 Jing Tang (The Hong Kong University of Science and Technology (GZ))
 Mingjie Tang (Sichuan University)
 Bo Tang (Southern University of Science and Technology)
 Egemen Tanin (University of Melbourne)
 Ernest Teniente (Universitat Politècnica de Catalunya)
 Arash Termehchy (Oregon State University)
 Jens Teubner (TU Dortmund)
 Riccardo Torlone (Roma Tre University)
 Goce Trajcevski (Iowa State University)
 Immanuel Trummer (Cornell University)
 Eleni Tziritza Zacharitou (IT University of Copenhagen)
 Katerina Tzompanaki (CY Cergy Paris University)
 Leong Hou U (University of Macau)
 Alexander van Renen (UTN)
 Genoveva Vargas-Solar (CNRS LIRIS)
 Nalini Venkatasubramanian (University of California Irvine)
 Hannes Voigt (Neo4j)
 Hongzhi Wang (Harbin Institute of Technology)
 Ning Wang (Beijing Jiaotong University)
 Qitong Wang (Universite Paris Cite)
 Sibo Wang (The Chinese University of Hong Kong)
 Tianzheng Wang (Simon Fraser University)
 Yifan Wang (University of Florida)
 Sai Wu (Zhejiang University)
 Yinghui Wu (Case Western Reserve University)
 Yuncheng Wu (Renmin University of China)
 Xiaokui Xiao (National University of Singapore)
 Jianliang Xu (Hong Kong Baptist University)
 Jianqiu Xu (Nanjing University of Aeronautics and Astronautics)
 Nikolay Yakovets (TU Eindhoven)
 Xiao Yan (Centre for Perceptual and Interactive Intelligence (CPII))
 Hongzhi Yin (The University of Queensland)
 Man Lung Yiu (The Hong Kong Polytechnic University)
 Brit Youngmann (Technion)
 Jeffrey Xu Yu (The Chinese University of Hong Kong)
 Xiaohui Yu (York University)
 Yi Yu (NII)
 Ye Yuan (Beijing Institute of Technology)
 Cong Yue (National University of Singapore)
 Demetrios Zeinalipour-Yazti (University of Cyprus)
 Yuxiang Zeng (Beihang University)
 Steffen Zeuch (TU Berlin)
 Chao Zhang (University of Waterloo)
 Chen Zhang (The Hong Kong Polytechnic University)
 Huanchen Zhang (Tsinghua University)
 Meihui Zhang (Beijing Institute of Technology)
 Minjia Zhang (Microsoft AI and Research)
 Qizhen Zhang (University of Toronto)
 Xiaofei Zhang (University of Memphis)
 Yanfeng Zhang (Northeastern University)
 Bo Zhao (Aalto University)
 Zhuoyue Zhao (University at Buffalo)
 Bolong Zheng (Huazhong University of Science and Technology)
 Kaiping Zheng (National University of Singapore)
 Jingren Zhou (Alibaba Group)
 Xuan Zhou (East China Normal University)
 Yongluan Zhou (University of Copenhagen)
 Yiwen Zhu (Microsoft)
 Jia Zou (Arizona State University)
 Lei Zou (Peking University)
 Kostas Zoumpatianos (Snowflake)
 Andreas Zufle (Emory University)

LETTER FROM THE EDITORS IN CHIEF

We are pleased to present the ninth (May 2025) issue of PVLDB Volume 18, which contains 35 papers from 3 categories: Scalable Data Science (1), Experiment, Analysis & Benchmark (8), and Regular Research (26).

These papers cover a diverse collection of primary subject areas, including: Database Engines (5); Data Mining and Analytics (5); Machine Learning, AI, and Databases (3); Information Integration and Data Quality (3); Database Performance and Manageability (2); Distributed Database Systems (5); Graph and Network Data (6); User Interfaces (1); Novel Database Architectures (2); and Specialized and Domain-Specific Data Management (3).

We are grateful to our board of associate editors and reviewers as well as proceedings chairs for their dedicated service that made this issue possible.

In this letter, we would like to highlight the role of the PVLDB Advisory Board and Managing Editors. This board, chaired by the Managing Editor, oversees and advises on the editorial processes and policies of PVLDB. The board meets monthly, hears status updates from the current Editors-in-Chief, and discusses a wide range of topics from technical issues such as the paper submission system, processes such as review assignment, policies such as conflicts of interest, to longer-term visions such as the evolution of PVLDB scope of interest and paper categories. Wolfgang Lehner, who served as the PVLDB Managing Editor since 2018, stepped down at the end of 2024; Jun Yang is now the current Managing Editor. We would like to thank the contributions of the board members: Sourav S. Bhowmick, Vanessa Braganholo, Lei Chen, Xin Luna Dong, Wolfgang Lehner, Alexandra Meliou, Felix Naumann, Fatma Özcan, Divesh Srivastava, and Meihui Zhang. Graham Cormode and Juliana Freire retired from the board in 2024. In addition to these regular members, the board also includes as its ad hoc members the co-chair of the Reproducibility Track, Torsten Grust, as well as Editors-in-Chief of current and upcoming PVLDB volumes: Yanlei Diao and Xiaokui Xiao (Vol. 19); Matthias Boehm and Katja Hose (Vol. 20).

Wolfgang Lehner, Jun Yang
PVLDB Managing Editors

Themis Palpanas and Nesime Tatbul
Editors-in-Chief of PVLDB Vol. 18
Program Chairs for VLDB 2025