

AI & MACHINE LEARNING PUBLICATIONS INVENTORY

Conferences, published articles, seminars/webinars and whitepapers featuring IQVIA experts.

Contents

2024	4
PEER REVIEWED ARTICLES	4
CONFERENCES	4
PMSA.....	4
ARTICLES (CONTINUED)	5
2023	5
PEER REVIEWED ARTICLES	5
CONFERENCES	6
PMSA.....	6
ARTICLES (CONTINUED)	7
WHITEPAPER	8
2022	8
PEER REVIEWED ARTICLES	8
CONFERENCES	11
AAAI.....	11
ACM.....	11
ISPOR.....	11
PMSA.....	12
ASCO.....	13
IJCAI	13
PKDD.....	13
CONFERENCES (CONTINUED)	13
ARTICLES (CONTINUED)	14
WHITEPAPERS	15
PLACED MEDIA.....	15
2021	15
PEER REVIEWED ARTICLES.....	15
CONFERENCES	18
AAAI.....	18
BIBM	19
WWW.....	19
ASCO.....	19
CONFERENCES (CONTINUED)	19
ARTICLES (CONTINUED)	21
BOOKS	21
2020.....	21
PEER REVIEWED ARTICLES.....	21

CONFERENCES	22
AAAI.....	22
KDD	23
CIKM.....	23
BIBM.....	23
IEEE Big Data.....	23
ICASSP.....	23
CISS	24
PSB.....	24
WWW.....	24
NeurIPS.....	24
CONFERENCES (CONTINUED).....	24
ARTICLES (CONTINUED)	25
WHITEPAPERS	26
BOOKS	26
2019.....	26
PEER REVIEWED ARTICLES.....	26
CONFERENCES	27
NIPS	27
PKDD.....	27
KDD	27
IJCAI.....	28
MLHC.....	28
ACM-BCB.....	28
WWW.....	28
CONFERENCES (CONTINUED).....	28
ARTICLES (CONTINUED)	30
WHITEPAPERS	31
BOOKS	31
2018.....	31
CONFERENCES	31
NIPS	31
CONFERENCES (CONTINUED).....	32
ARTICLES.....	32
WHITEPAPERS	33
2017.....	33
CONFERENCES	33
ARTICLES.....	33
2016.....	33
PEER REVIEWED ARTICLES.....	33
CONFERENCES	34
ARTICLES.....	34
2015.....	34
PEER REVIEWED ARTICLES.....	34
CONFERENCES	35
ARTICLES.....	35
2014.....	35
CONFERENCES	35
ARTICLES.....	35
2013.....	36

CONFERENCES	36
ARTICLES.....	36
2012.....	36
ARTICLES.....	36
2008.....	36
ARTICLES.....	36
2007.....	37
ARTICLES.....	37
2006.....	37
ARTICLES.....	37
2005.....	37
ARTICLES.....	37
2004.....	37
ARTICLES.....	37
2000.....	38
ARTICLES.....	38

***To find any of the listed publications, please follow this [link](#), enter the title of the publication and press “Search”.**

2024

Peer Reviewed Articles

1. Jie Hu, Vishwaraj Doshi, and Do Young Eun, “**Accelerating Distributed Stochastic Optimization via Self-Repellent Random Walks**”, Proceedings of Twelfth International Conference on Learning Representations (ICLR).
2. ie Hu, Vishwaraj Doshi, and Do Young Eun, “**Central Limit Theorem for Two-Timescale Stochastic Approximation with Markovian Noise: Theory and Applications**”, Proceedings of Artificial Intelligence and Statistics (AISTATS) 2024.
3. Ambrosy AP, Yang J, Tai AS, Dimbil SJ, Garcia EA, **Eligibility and potential benefit of transcatheter edge-to-edge repair in a contemporary cohort with heart failure: evidence from a large integrated health care delivery system. Structural Heart.** 2023 Dec 19:100237.
4. Papini S, Iturralde E, Lu Y, Greene JD, Barreda F, Sterling SA, Liu VX. **Development and validation of a machine learning model using electronic health records to predict trauma- and stressor-related psychiatric disorders after hospitalization with sepsis.** Transl Psychiatry. 2023 Dec 18;13(1):400.
5. Vora B, Kuruvilla D, Kim C, Wu M, Shemesh CS, Roth GA. **Applying Natural Language Processing to ClinicalTrials.gov: mRNA cancer vaccine case study.** Clin Transl Sci. 2023 Dec;16(12):2417-2420.
6. **FedFixer: Mitigating Heterogeneous Label Noise in Federated Learning.** Xinyuan Ji, Zhaowei Zhu, Wei Xi, Olga Gadyatskaya, Zilong Song, Yong Cai, Yang Liu, AAAI Conference on Artificial Intelligence (AAAI) 38th, 2024.

Conferences

PMSA

1. Urmila Ravichandran; Danielle Jungst; Emily Kwan. **Implementing an NLP Tool to Address SDOH Needs.** 2023 IEEE 11th International Conference on Healthcare Informatics (ICHI).
2. Rath N, Harrison W, Louvet E, Dunlop W, Liljas B. **Assessing the Feasibility of Applying Natural Language Processing for Systematic Literature Reviews: A Case Study in Non-Small-Cell Lung Cancer.** VOLUME 26, ISSUE 12, SUPPLEMENT , S414, DECEMBER 2023.
3. Spanashis, A., Lazzarini, N., Filippoupolitis, A., Stewart, H. and Francis, S., **Using Machine Learning to Explore Social Media Engagement with Medical Publications.** Poster Presentation at 2024 European Meeting of the International Society for Medical Publication Professionals (ISMPP).
4. Sakellariou, D., Kumar, P., Stankevicius, A., Lazzarini, N. and Filippoupolitis, A., **A Deep Learning Factory for Sequential Claims Data.** Poster Presentation at PMSA 2023 Annual Conference

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1. Bamford S, Arbuckle L, Chetelat P. **Diversity in Clinical Trial Data Transparency: A New Horizon for Data Sharing with Truthful Statistics.** *Applied Clinical Trials.* 2024 Jan 29.
2. Seng Chan You, MD; Seung In Seo, MD; Thomas Falconer, MSc; Chen Yanover, PhD; **Ranitidine Use and Incident Cancer in a Multinational Cohort.** *JAMA Netw Open.* 2023;6(9):e2333495. doi:10.1001/jamanetworkopen.2023.33495

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7. Rigg J, Doyle O, McDonogh N, Leavitt N, Ali R, Son A, Kreter B. **Finding undiagnosed patients with hepatitis C virus: an application of machine learning to US ambulatory electronic medical records.** *BMJ Health & Care Informatics.* 2023 Jan 1;30(1): e100651.
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9. Luo H, Lau WCY, Chai Y, Torre CO, Howard R, Liu KY, et al. **Rates of Antipsychotic Drug Prescribing Among People Living with Dementia During the COVID-19 Pandemic.** *JAMA Psychiatry.* 2023 Jan 25: e224448. doi: 10.1001/jamapsychiatry.2022.4448. Epub ahead of print. PMID: 36696128; PMCID: PMC9878427.
10. Philippe Rocca-Serra, Wei Gu, Vassilios Ioannidis, Tooba abbassi-Daloi, Salvador, et al.; **The FAIR Cookbook - the essential resource for and by FAIR doers.** *Sci Data* **10, 292 (2023).** <https://doi.org/10.1038/s41597-023-02166-3>
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14. Suhan Cui, Guanhao Wei, Li Zhou, Emily Zhao, Ting Wang, and Fenglong Ma. **Predicting line of therapy transition via similar patient augmentation.** *Journal of Biomedical Informatics.* 9 Oct (2023): 104511 <https://doi.org/10.1016/j.jbi.2023.104511>

15. Lewis A, Gupta A, Oh I, Schindler SE, et al. **Association Between Socioeconomic Factors, Race, and Use of a Specialty Memory Clinic.** *Neurology*. 2023 Oct 3;101(14):e1424-e1433
16. Parikh RV, Go AS, Bhatt AS, Tan TC, et al. **Developing Clinical Risk Prediction Models for Worsening Heart Failure Events and Death by Left Ventricular Ejection Fraction.** *J Am Heart Assoc*. 2023 Oct 3;12(19):e029736
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19. Ambrosy AP, Go AS, Leong TK, Garcia EA, et al. **Temporal trends in the prevalence and severity of aortic stenosis within a contemporary and diverse community-based cohort.** *Int J Cardiol*. 2023 Aug 1;384:107-111.
20. Roth GA, Vora B, Kim C, Wu M, Kuruvilla D. **Prevalence and utility of pharmacokinetic data in preclinical studies of mRNA cancer vaccines.** *Clin Transl Sci*. 2023 Sep;16(9):1554-1558. doi: 10.1111/cts.13586
21. Vishwaraj Doshi, Jie Hu, Do Young Eun, **Self-Repellent Random Walks on General Graphs – Achieving Minimal Sampling Variance via Nonlinear Markov Chains, International Conference on Machine Learning (ICML), July 2023.**
22. Li, Quan, Lingwei Chen, Yong Cai, and Dinghao Wu. **“Hierarchical Graph Neural Network for Patient Treatment Preference Prediction with External Knowledge.”** In Pacific-Asia Conference on Knowledge Discovery and Data Mining, 204–15. Springer, 2023.

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23. Ruoxin Li, Karl Svensson, Lihua Tan, Rowan D’Annibale, Paige Desmarais, **Finding Hidden Referrers for Infusion Products by Leveraging Machine Learning,** Podium Presentation at PMSA 2023 Annual Conference
24. Ruoxin Li, Yujie Sun, Yunlong Wang, **Identifying Lookalike Healthcare Providers by Looking – Using Computer Vision Techniques to Find Next Best Targets,** Poster Presentation at PMSA 2023 Annual Conference
25. Tong Wu, Mateusz Buda, Mukesh Mithrakumar, Yunlong Wang, Srikanth Sankaran Iyer, Tanveer Ahmed Nasir, **"Leveraging Language Model for Next Best Action in Promotion Campaigns to Augment HCP Engagement",** 2023 PMSA Annual Conference, May 2023

26. Mack C, Sun J, Wang Z, Gao C, Rough K, Glass L. **Machine Learning and Artificial Intelligence for Clinical Trial Optimization: A Review of Opportunities to Leverage Real World Data [abstract]**. In: ISPOR 2023; 2023 May 7-10; Boston, MA, USA.
27. Shankar R, Poole L, Halmos T, Dn V, Sen S, Rough K, Mack C. **Using AI to Support Evidence & Market Access Strategy Development [presentation]**. In: ISPOR 2023; 2023 May 7-10; Boston, MA, USA.
28. Wenbo Zhang, Tong Wu, Yunlong Wang, Yong Cai, and Hengrui Cai, **"Towards Trustworthy Explanation: On Causal Rationalization"**, 40th International Conference on Machine Learning (ICML), 2023
29. Hui Jin, **Rare Disease Detection Solution Empowered by AI/ML**, The 12th China Rare Disease Summit
30. Anna Teschemaker,¹ Shweta Hakre, et al. ¹Global Medical Affairs, AstraZeneca Pharmaceuticals, Gaithersburg, MD, USA; ²US Medical Affairs, AstraZeneca Pharmaceuticals, Gaithersburg, MD, USA; ³IQVIA, Durham, NC, USA. **Real-World Duration of Venetoclax Treatment for Chronic Lymphocytic Leukemia and Small Lymphocytic Lymphoma**.
31. Hui Jin, **ChatGPT empowered Hemophilia Nuring**, 2023 WFH-HTCCNC
32. Hui Jin, **Generative AI empowerd innovation in healthcare in China**, 2023 IQVIA CAF Conference.
33. Sees A, Harder B, Lee S, Ali R, et al. **Early identification of patients at risk for Type-2 diabetes using machine learning models [Poster]**. In: 39th ICPE; 2023 August 23-27; Halifax, Nova Scotia, Canada.
34. Mack CD, Rough K, Teltsch D, Dickonson H, Strauss V. **Deep Learning for Pharmacoepidemiologists: An Accessible Introduction to Neural Networks [Workshop]**. In: 39th ICPE; 2023 August 23-27; Halifax, Nova Scotia, Canada.
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36. Wenzhe Lu, Rory Martin, **Benchmarking the Impact of IDNs on Brand Utilization by Therapeutic Areas**, 2023 PMSA Annual Conference, May 2023.

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37. Biswal D, Arbuckle L, **Will ChatGPT Put Data Sharing at Risk, Privacy Analytics**. 2023. <https://privacy-analytics.com/resources/articles/will-chatgpt-put-data-sharing-at-risk/>
38. Hui Jin, Yue Wang, Siyi Yu, Chuchu Liu, Daozhou Yao, Suge Wang, **COVID-19 Tracking for VOC, drug, and vaccine**.
39. Hui Jin, Yue Wang, Tu Tu, Yubo He, Bingzhen Wu, et al. **ChatGPT application discussion in healthcare**

Whitepaper

40. Milligan P, Feng H, Rough K, et al. **Navigating new large language models in healthcare NLP. IQVIA White Paper.** 2023 August 23. Available at: <https://www.iqvia.com/-/media/iqvia/pdfs/library/white-papers/navigating-new-large-language-models-in-healthcare-nlp.pdf>

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43. Bamford, S., Lyons, S., Arbuckle, L., & Chetelat, P. **Sharing Anonymized and Functionally Effective (SAFE) Data Standard for Safely Sharing Rich Clinical Trial Data.** *Applied Clinical Trials* (2022).
44. Rishi Parikh, Thida Tan, Ajit Mahapatra, Weijia Wang, Robert Perkins, Alan Go. **Population-Based Identification of Biopsy Proven IGA Nephropathy using Natural Language Processing: The Knight Study.** *Nephrology Dialysis Transplantation*, Volume 37, Issue Supplement_3, May 2022, gfac105.001, <https://doi.org/10.1093/ndt/gfac105.001>
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51. Jie Hu, Vishwaraj Doshi and Do Young Eun, “**Efficiency Ordering of Stochastic Gradient Descent**”. *Advances in Neural Information Processing* 35, NeurIPS, 2022
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55. Chaoqi Yang, Cheng Qian, Jimeng Sun. **GOCP: Generalized Online Canonical Polyadic Tensor Factorization and Completion**. arXiv:2205.03749 (2022).
56. Zifeng Wang, Chufan Gao, Lucas M. Glass, Jimeng Sun. **Artificial Intelligence for In Silico Clinical Trials: A Review**. arXiv:2209.09023 (2022).
57. Zhenbang Wu, Huaxiu Yao, Zhe Su, David M Liebovitz, Lucas M Glass, et al. **Knowledge-Driven New Drug Recommendation**. arXiv:2210.05572 (2022).
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73. "**Analysis of Worsening Heart Failure Events in an Integrated Health Care System.** Ambrosy AP, Parikh RV, Sung SH, Tan TC, Narayanan A, et al. 2022 Jul 12;80(2):111-122"
74. "**Facilitating clinical research through automation: Combining optical character recognition with natural language processing.** Hom J, Nikowitz J, Ottesen R, Niland JC. Clin Trials. 2022 May 24:17407745221093621. doi: 10.1177/17407745221093621. Online ahead of print. PMID: 35608136"
75. "**Population-Based Identification of Biopsy Proven IGA Nephropathy using Natural Language Processing: The Knight Study** Rishi Parikh, Thida Tan, Ajit Mahapatra, Weijia Wang, Robert Perkins, Alan Go Nephrology Dialysis Transplantation, Volume 37, Issue Supplement_3, May 2022, gfac105.001, <https://doi.org/10.1093/ndt/gfac105.001>"

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77. Solomon BJ, Loong HH, Summers Y, Thomas ZM, French P, Lin BK, Sashegyi A, Wolf J, Yang JC, Drilon A. **Correlation between treatment effects on response rate and progression-free survival and overall survival in trials of targeted therapies in molecularly enriched populations.** ESMO Open. 2022 Feb 15;7(2):100398. doi: 10.1016/j.esmoop.2022.100398. Epub ahead of print. PMID: 35183043.
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80. Lau WCY, Torre CO, Man KKC, Stewart HM, Seager S, Van Zandt M, et al. **Comparative Effectiveness and Safety Between Apixaban, Dabigatran, Edoxaban, and Rivaroxaban Among Patients With Atrial Fibrillation : A Multinational Population-Based Cohort Study.** Ann Intern Med. 2022 Nov;175(11):1515-1524. doi: 10.7326/M22-0511. Epub 2022 Nov 1. Erratum in: Ann Intern Med. 2022 Dec 6;: PMID: 36315950.

Conferences

AAAI

81. Lin, Zhen, Lucas Glass, M. Brandon Westover, Cao Xiao, and Jimeng Sun. **SCRIB: set-classifier with class-specific risk bounds for blackbox models.** Thirty-Sixth AAAI Conference on Artificial Intelligence, vol. 36, no. 7, pp. 7497-7505, 2022.

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82. Gao, Junyi, Cao Xiao, Lucas M. Glass, and Jimeng Sun. **PopNet: Real-Time Population-Level Disease Prediction with Data Latency.** In Proceedings of the ACM Web Conference 2022, pp. 2552-2562. 2022.

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83. Tu T, Chen L, Wang Y, Jin H, He W. **Multi-Task Learning in Click-through-Probability (Multi-CTP) Prediction for Real-World Digital Content Recommendation.** ISPOR 2022, Virtual conference, May 2022
84. Rebollo P, Wolk A, Luczko M, Tang JP, **Development of a Machine Learning predictive model for stroke among patients with non-valvular atrial fibrillation receiving oral anticoagulant treatment,** ISPOR 2022.

85. Rathore A, Anastassopoulou A, Parhofer KG, Becker C, Zamfir C, Calver H, Dave R, **Machine Learning for Clustering Dyslipidemia Patients with Statin Intolerance in Germany**, ISPOR 2022.
86. Yuri Sakai, Takanori Ishii, Seok-Won Kim, Satoshi Murayama, Asahi, Lee Hirofumi, Shi Wen, Shujiro Takeno **Prevalence of depression in Japan and the US Populations before and during the covid 19 pandemic: A retrospective observational study using real world data** November 2022 – ISPOR Europe <https://www.ispor.org/heor-resources/presentations-database/presentation/euro2022-3564/119994>
87. Cook J, Mattern F, Schnauffer D, Wiest T, Gallinger P. **Implementation and application of the physician information system (arztinformationssystem, ais) in Germany**, November 2022 – ISPOR Europe <https://www.ispor.org/heor-resources/presentations-database/presentation/euro2022-3565/119130>
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89. Wenli Sun, Yong Cai, Yanping liu, **Comparisons of Encoding Techniques for Categorical Features in Linear Regression Models**, 2022 ISPOR Annual Conference, May 2022.

PMSA

90. John Eichert, D. Bruce West, Guanhao Wei, Li Zhou, Lynn Lu. **AIML Powered Thought Leader Networks for Identifying HCP Relationships and Boosting Market Performance**. 2022 PMSA Annual Conference, May 2022
91. Guanhao Wei, Marc Romano, Li Zhou, Lynn Lu, Yunlong Wang. **Innovative Dynamic Graph Network based Deep Learning Algorithms to Enhance Rare Disease Detection and Patient Feature Interaction Analysis**. 2022 PMSA Annual Conference, May 2022
92. Yong Cai, Wei Huang, Wenzhe Lu, Ruoxin Li, and Yanping Liu. **Benchmarking Performance of Various Promotional Channels by Brand, Lifecycle, and COVID**, 2022 PMSA Annual Conference, May 2022
93. Tong Wu, Yunlong Wang, Yoder Shawn, Yingli Yuan, **Multi-Indication Analytics from Longitudinal Prescription Data using Bayesian Two-Step Ensemble Model**, 2022 PMSA Annual Conference, May 2022
94. Ruoxin Li, Robert Kelly, Lihua Tan, **Deciphering Standing Orders - Attributing Prescriptions to Influencers via Machine Learning**, 2022 PMSA Annual Conference, May 2022

ASCO

95. Guanhao Wei, Li Zhou, Lynn Lu, Marc Romano. **Sequential EHR-based dynamic graph network for multiple myeloma detection and feature interaction investigation.** (2022): e13591-e13591, 2022 ASCO Annual Meeting

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[Back to the Top](#)