



# AI & Machine Learning Publications Inventory

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



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## 2024

### Conferences

#### PMSA

1. Tim Weckwerth, Steve Eichert, Yanping Liu, Wenzhe Lu, Yong Cai, Getting Ahead of the Game: Identify the Future Rising Star Clinical Thought Leaders Before Anyone Else, 2023 PMSA Annual Conference, May 2023
2. Dheeraj Behl, Yanping Liu, Brian Lasky, Patrick Angelastro, Ruoxin Li. Identifying Untapped Opportunities for Brand Performance by Assessing Gaps in Ideal Patient Prescribing Situations. PMSA 2024 Annual Conference
3. Jessica Zhang, Elizabeth Wallace, Ruoxin Li, Sapna Sharma, Paige Desmarais. Prescription Re-attribution for Accurate Incentive Compensation and Field Deployment in the Immunology Market. PMSA 2024 Annual Conference.
4. Spanashis, A., Lazzarini, N., Filippopolitis, 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, January 2024.
5. Dimitris Fotis Sakellariou, Prabhat Kumar, Aistis Stankevicius, Nicola Lazzarini and Avgoustinos Filippopolitis. A Deep Learning Factory for Sequential Claims Data. Poster presentation at 2023 PMSA Annual Conference, May 2023.
6. Tong Wu, Doug Hudson, Yunlong Wang, Steve Eichert, and Yong Cai, An Automated KOL Analytic Engine Powered by Large Language Models and Graph Machine Learning to Enrich HCP Profiles with Scientific Data, PMSA 2024 Annual Conference.
7. Byeongchan Jeong, Tong Wu, Anh Tuan Nguyen, Jian Xu, Jonathan Cheng, Edward Keefer and Zhi Yang, Compression-based Feature Reduction for Upper Limb Motor Decoding from Peripheral Neural Signal, IEEE International Conference on Wearable and Implantable Body Sensor Networks, Oct. 2024.

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8. Ruoxin Li, Karl Svensson, Paige Desmarais, Rowan D'Annibale, Lihua Tan. Finding Hidden Referrers for Infusion Products by Leveraging Machine Learning. Journal of the Pharmaceutical Management Science Association, 2024

#### Peer Reviewed Articles

9. Chai Y, Man KKC, Luo H, et al. Incidence of mental health diagnoses during the COVID-19 pandemic: a multinational network study. Epidemiology and Psychiatric Sciences. 2024;33:e9. doi:10.1017/S2045796024000088

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10. 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.

11. Wakutsu N, Hirose E, Yonemoto N, Demiya S. **Assessing Definitions, and Incentives Adopted for Innovation for Pharmaceutical Products in Five High-Income Countries: A Systematic Literature Review.** *Pharmaceut Med.* 2023 Jan 17:1–18
12. 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.
13. 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>
14. Gao, J., Heintz, J., Mack, C., Glass, L., Cross, A., & Sun, J. (2023). **Evidence-driven spatiotemporal COVID-19 hospitalization prediction with Ising dynamics.** *Nature communications*, 14(1), 3093. <https://doi.org/10.1038/s41467-023-38756-3>
15. Serghiou, S., & Rough, K. (2023). **Deep Learning for Epidemiologists: An introduction to neural networks.** *American journal of epidemiology*, kwad107. Advance online publication. <https://doi.org/10.1093/aje/kwad107>
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17. 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>
18. 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
19. 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
20. Schneider CV, Li T, Zhang D, Mezina AI, et al. **Large-scale identification of undiagnosed hepatic steatosis using natural language processing.** *EClinicalMedicine.* 2023 Aug 9;62:102149.
21. Riley-Gillis B, Tsaih SW, King E, Wollenhaupt S, et al. **Machine learning reveals genetic modifiers of the immune microenvironment of cancer.** *iScience.* 2023 Aug 9;26(9):107576.
22. 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.
23. 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
24. 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.

25. 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.

## Conferences

### PMSA

26. 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
27. 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
28. 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
29. 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.
30. 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.
31. 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
32. Hui Jin, **Rare Disease Detection Solution Empowered by AI/ML**, The 12th China Rare Disease Summit
33. Anna Teschemaker,<sup>1</sup> Shweta Hakre, et al. <sup>1</sup>Global Medical Affairs, AstraZeneca Pharmaceuticals, Gaithersburg, MD, USA; <sup>2</sup>US Medical Affairs, AstraZeneca Pharmaceuticals, Gaithersburg, MD, USA; <sup>3</sup>IQVIA, Durham, NC, USA. **Real-World Duration of Venetoclax Treatment for Chronic Lymphocytic Leukemia and Small Lymphocytic Lymphoma.**
34. Hui Jin, **ChatGPT empowered Hemophilia Nuring**, 2023 WFH-HTCCNC
35. Hui Jin, **Generative AI empowerd innovation in healthcare in China**, 2023 IQVIA CAF Conference.
36. 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.
37. 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.
38. Wenli Sun, Yong Cai, **A Dynamic Panel Binary Data Model for Personalized Patient Engagement Prediction International Society for Pharmacoeconomics and Outcomes Research (ISPOR)**, May 2023

39. 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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40. 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/>
41. Hui Jin, Yue Wang, Siyi Yu, Chuchu Liu, Daozhou Yao, Suge Wang, **COVID-19 Tracking for VOC, drug, and vaccine**.
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### Whitepaper

43. 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>

## 2022

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44. Fu, Tianfan, Kexin Huang, Cao Xiao, Lucas M. Glass, and Jimeng Sun. **HINT: Hierarchical interaction network for clinical-trial-outcome predictions**. *Patterns* 3, no. 4 (2022): 100445.
45. Ambrosy AP, Parikh RV, Sung SH, Tan TC, Narayanan A, et al. **Analysis of Worsening Heart Failure Events in an Integrated Health Care System**. *J Am Coll Cardiol*. 2022 Jul 12;80(2):111-122
46. 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).
47. 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>
48. Hom J, Nikowitz J, Ottesen R, Niland JC. **Facilitating clinical research through automation: Combining optical character recognition with natural language processing**. *Clin Trials*. 2022 May 24;17407745221093621. doi: 10.1177/17407745221093621. Online ahead of print. PMID: 35608136
49. Soora Wi, Patricia E. Goldhoff, Laurie A. Fuller, Kiranjit Grewal, et al; **Using Natural Language Processing to Improve Discrete Data Capture From Interpretive Cervical Biopsy Diagnoses at a Large Health Care Organization**. *Arch Pathol Lab Med* 2022; doi: <https://doi.org/10.5858/arpa.2021-0410-OA>
50. Solomon BJ, Loong HH, Summers Y, Thomas ZM, French P, et al. **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.



51. A Witzmann, E Batanova, L Queiros, S Abogunrin. **Ontology-Based Text Mining in Scientific Literature. Value in Health.** Volume 25, Issue 1, Supplement, S202
52. King, L. M., Kusnetsov, M., Filippoupolitis, A., Arik, D., Bartoces, et al. (2022) **Using machine learning to examine drivers of inappropriate outpatient antibiotic prescribing in acute respiratory illnesses**, Infection Control & Hospital Epidemiology. Cambridge University Press, pp. 1–5. doi: 10.1017/ice.2021.476.
53. Hu, Lining, Yuhang Zhang, Yang Zhao, Tong Wu, and Yongfu Li. **"Micro-YOLO+: Searching Optimal Methods for Compressing Object Detection Model Based on Speed, Size, Cost, and Accuracy."** SN Computer Science 3, no. 5 (2022): 1-8.
54. Jie Hu, Vishwaraj Doshi and Do Young Eun, **"Efficiency Ordering of Stochastic Gradient Descent"**. Advances in Neural Information Processing 35, NeurIPS, 2022
55. Lazzarini, N., Filippoupolitis, A., Manzione, P. and Eleftherohorinou, H., 2022. **A machine learning model on Real World Data for predicting progression to acute respiratory distress syndrome (ARDS) among COVID-19 patients.** PLoS One, 17(7), p.e0271227. <https://doi.org/10.1371/journal.pone.0271227>
56. Schöler D., Kostev K., Peters M., Zamfir C., Wolk A., Roderburg C., Loosen S.H., **Machine learning can predict the probability of biologic therapy in patients with inflammatory bowel disease**, Journal of Clinical Medicine.
57. Junyi Gao, Cao Xiao, Lucas M. Glass, Jimeng Sun. **PopNet: Real-Time Population-Level Disease Prediction with Data Latency.** arXiv:2202.03415 (2022).
58. Chaoqi Yang, Cheng Qian, Jimeng Sun. **GOCPT: Generalized Online Canonical Polyadic Tensor Factorization and Completion.** arXiv:2205.03749 (2022).
59. Zifeng Wang, Chufan Gao, Lucas M. Glass, Jimeng Sun. **Artificial Intelligence for In Silico Clinical Trials: A Review.** arXiv:2209.09023 (2022).
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62. Christina Scott, Andrew Dodson, Muriel Saulnier, Kevin Snyder, Rebecca Racz, **Analysis of secondary pharmacology assays received by the US Food and Drug Administration**, J Pharmacol Toxicol Methods. 2022 Aug 1; <https://doi.org/10.1016/j.vascn.2022.107205>.
63. Catherine E. Barrett, PhD; Alain K. Koyama, ScD; Pablo Alvarez, MPH; Wilson Chow; Elizabeth A. Lundeen, PhD; et al. **Risk for Newly Diagnosed Diabetes >30 Days After SARS-CoV-2 Infection Among Persons Aged <18 years - United States**, March 1, 2020–June 28, 2021, January 2022 - Morbidity and Mortality Weekly Report (MMWR), <https://www.cdc.gov/mmwr/volumes/71/wr/mm7102e2.htm>
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76. **"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"
77. **"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"
78. **"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>"
79. Soora Wi, Patricia E. Goldhoff, Laurie A. Fuller, Kiranjit Grewal, Nicolas Wentzensen, Megan A. Clarke, Thomas S. Lorey; **Using Natural Language Processing to Improve Discrete Data**

**Capture From Interpretive Cervical Biopsy Diagnoses at a Large Health Care Organization.**  
Arch Pathol Lab Med 2022; doi: <https://doi.org/10.5858/arpa.2021-0410-OA>

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81. A Witzmann, E Batanova, L Queiros, S Abogunrin. **Ontology-Based Text Mining in Scientific Literature.** Value in Health. VOLUME 25, ISSUE 1, SUPPLEMENT , S202,
82. Li X, Burn E, Duarte-Salles T, Yin C, Reich C, Delmestri A et al. **Comparative risk of thrombosis with thrombocytopenia syndrome or thromboembolic events associated with different covid-19 vaccines: international network cohort study from five European countries and the US** BMJ 2022; 379 :e071594 doi:10.1136/bmj-2022-071594
83. 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

84. 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.

### ACM

85. 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.

### ISPOR

86. 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
87. 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.
88. 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.
89. 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>

90. 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>
91. 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
92. Wenli Sun, Yong Cai, Yanping liu, **Comparisons of Encoding Techniques for Categorical Features in Linear Regression Models**, 2022 ISPOR Annual Conference, May 2022.

#### **PMSA**

93. 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
94. 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
95. 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
96. 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
97. Ruoxin Li, Robert Kelly, Lihua Tan, **Deciphering Standing Orders - Attributing Prescriptions to Influencers via Machine Learning**, 2022 PMSA Annual Conference, May 2022

#### **ASCO**

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#### **IJCAI**

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