List of peer-reviewed publications

Alexej Gossmann

March 25, 2024

Bibliography

Xudong Sun, Nutan Chen, Alexej Gossmann, Yu Xing, Carla Feistner, Emilio Dorigatt, Felix Drost, Daniele Scarcella, Lisa Beer, and Carsten Marr. M-HOF-Opt: Multi-Objective Hierarchical Output Feedback Optimization via Multiplier Induced Loss Landscape Scheduling. *arXiv:2403.13728*, March 2024a.

Xudong Sun, Carla Feistner, Alexej Gossmann, George Schwarz, Rao Muhammad Umer, Lisa Beer, Patrick Rockenschaub, Rahul Babu Shrestha, Armin Gruber, Nutan Chen, Sayedali Shetab Boushehri, Florian Buettner, and Carsten Marr. DomainLab: A modular Python package for domain generalization in deep learning. *arXiv:2403.14356*, March 2024b.

Jean Feng, Harvineet Singh, Fan Xia, Adarsh Subbaswamy, and Alexej Gossmann. A hierarchical decomposition for explaining ML performance discrepancies. *arXiv:2402.14254*, February 2024.

Alexej Gossmann, Berkman Sahiner, Ravi K. Samala, Si Wen, Kenny H. Cha, and Nicholas Petrick. Considerations in the assessment of machine learning algorithm performance for medical imaging. In Kevin S. Zhou, Hayit Greenspan, and Dinggang Shen, editors, *Deep Learning for Medical Image Analysis*, The Elsevier and MICCAI Society Book Series, pages 473–507. Elsevier Academic Press, 2 edition, December 2023. ISBN 978-0-323-85124-4. doi:10.1016/B978-0-32-385124-4.00029-5.

Mariia Sidulova, Xudong Sun, and Alexej Gossmann. Deep Unsupervised Clustering for Conditional Identification of Subgroups Within a Digital

Pathology Image Set. In Hayit Greenspan, Anant Madabhushi, Parvin Mousavi, Septimiu Salcudean, James Duncan, Tanveer Syeda-Mahmood, and Russell Taylor, editors, *Medical Image Computing and Computer Assisted Intervention – MICCAI 2023*, volume 14227, pages 666–675. Springer Nature Switzerland, November 2023. ISBN 978-3-031-43992-6 978-3-031-43993-3. doi:10.1007/978-3-031-43993-3_64.

Jean Feng, Adarsh Subbaswamy, Alexej Gossmann, Harvineet Singh, Berkman Sahiner, Mi-Ok Kim, Gene Pennello, Nicholas Petrick, Romain Pirracchio, and Fan Xia. Towards a post-market monitoring framework for machine learning-based medical devices: A case study. In *NeurIPS 2023 Workshop on Regulatable ML*, December 2023a. URL https://openreview.net/forum?id=L97dqPfQdT.

Thibaud Coroller, Berkman Sahiner, Anup Amatya, Alexej Gossmann, Konstantinos Karagiannis, Conor Moloney, Ravi K. Samala, Luis Santana-Quintero, Nadia Solovieff, Craig Wang, Laleh Amiri-Kordestani, Qian Cao, Kenny H. Cha, Rosane Charlab, Frank H. Cross Jr, Tingting Hu, Ruihao Huang, Jeffrey Kraft, Peter Krusche, Yutong Li, Zheng Li, Ilya Mazo, Rahul Paul, Susan Schnakenberg, Paolo Serra, Sean Smith, Chi Song, Fei Su, Mohit Tiwari, Colin Vechery, Xin Xiong, Juan Pablo Zarate, Hao Zhu, Arunava Chakravartty, Qi Liu, David Ohlssen, Nicholas Petrick, Julie A. Schneider, Mark Walderhaug, and Emmanuel Zuber. Methodology for good machine learning with multi-omics data. page cpt.3105, November 2023a. ISSN 0009-9236, 1532-6535. doi:10.1002/cpt.3105.

Thibaud Coroller, Berkman Sahiner, Anup Amatya, Alexej Gossmann, Konstantinos Karagiannis, Ravi K. Samala, Luis Santana-Quintero, Nadia Solovieff, Craig Wang, Laleh Amiri-Kordestani, Qian Cao, Kenny H. Cha, Rosane Charlab Orbach, Frank H. Cross, Tingting Hu, Ruihao Huang, Jeffrey Kraft, Peter Krusche, Yutong Li, Zheng Li, Ilya Mazo, Conor Moloney, Rahul Paul, Jason Plawinski, Susan Schnakenberg, Paolo Serra, Sean Smith, Chi Song, Fei Su, Sajanth Subramaniam, Mohit Tiwari, Colin Vechery, Xin Xiong, Juan Pablo Zarate, Jonathan Ziegler, Hao Zhu, Arunava Chakravartty, Qi Liu, David Ohlssen, Nicholas Petrick, Julie A. Schneider, Mark Walderhaug, and Emmanuel Zuber. Multi-omics investigation on the prognostic and predictive factors in metastatic breast cancer using data from Phase III ribociclib clinical trials: A statistical and ma-

chine learning analysis plan. page 2023.08.30.23294367, August 2023b. doi:10.1101/2023.08.30.23294367.

Jean Feng, Alexej Gossmann, Romain Pirracchio, Nicholas Petrick, Gene Pennello, and Berkman Sahiner. Is this model reliable for everyone? Testing for strong calibration. (arXiv:2307.15247), July 2023b.

Jean Feng, Gene Pennello, Nicholas Petrick, Berkman Sahiner, Romain Pirracchio, and Alexej Gossmann. Sequential algorithmic modification with test data reuse. In *Proceedings of the Thirty-Eighth Conference on Uncertainty in Artificial Intelligence*, pages 674–684. PMLR, August 2022a.

Jean Feng, Alexej Gossmann, Gene Pennello, Nicholas Petrick, Berkman Sahiner, and Romain Pirracchio. Monitoring machine learning (ML)-based risk prediction algorithms in the presence of confounding medical interventions. *arXiv:2211.09781*, November 2022b. doi:10.48550/arXiv.2211.09781.

Jean Feng, Alexej Gossmann, Berkman Sahiner, and Romain Pirracchio. Bayesian logistic regression for online recalibration and revision of risk prediction models with performance guarantees. *Journal of the American Medical Informatics Association*, 2022c. ISSN 1527-974X. doi:10.1093/jamia/ocab280. URL `https://doi.org/10.1093/jamia/ocab280`.

Alexej Gossmann, Aria Pezeshk, Yu-Ping Wang, and Berkman Sahiner. Test Data Reuse for the Evaluation of Continuously Evolving Classification Algorithms Using the Area under the Receiver Operating Characteristic Curve. *SIAM Journal on Mathematics of Data Science*, pages 692–714, January 2021. doi:10.1137/20M1333110. URL `https://doi.org/10.1137/20M1333110`.

Gene Pennello, Berkman Sahiner, Alexej Gossmann, and Nicholas Petrick. Discussion on "Approval policies for modifications to machine learning-based software as a medical device: A study of bio-creep" by Jean Feng, Scott Emerson, and Noah Simon. *Biometrics*, October 2020. ISSN 0006-341X, 1541-0420. doi:10.1111/biom.13381. URL `http://dx.doi.org/10.1111/biom.13381`.

Alexej Gossmann, Kenny H Cha, and Xudong Sun. Performance deterioration of deep neural networks for lesion classification in mammography due to distribution shift: an analysis based on artificially created distribution shift. In *Medical Imaging 2020: Computer-Aided Diagnosis*. International Society for Optics and Photonics, March 2020. doi:10.1117/12.2551346.

Kenny H Cha, Alexej Gossmann, Nicholas Petrick, and Berkman Sahiner. Supplementing training with data from a shifted distribution for machine learning classifiers: adding more cases may not always help. In *Medical Imaging 2020: Image Perception, Observer Performance, and Technology Assessment*. International Society for Optics and Photonics, March 2020. doi:10.1117/12.2550538.

Alexej Gossmann, Kenny H. Cha, and Xudong Sun. Variational inference based assessment of mammographic lesion classification algorithms under distribution shift. In *Medical Imaging Meets NeurIPS Workshop (MED-NeurIPS) 2019*, December 2019. URL https://profs.etsmtl.ca/hlombaert/public/medneurips2019/72_CameraReadySubmission_neurips_2019.pdf.

X Sun, A Gossmann, Y Wang, and B Bischt. Variational Resampling Based Assessment of Deep Neural Networks under Distribution Shift. In *2019 IEEE Symposium Series on Computational Intelligence (SSCI)*, pages 1344–1353, December 2019. doi:10.1109/SSCI44817.2019.9002665. URL http://dx.doi.org/10.1109/SSCI44817.2019.9002665.

Peyman Hosseinzadeh Kassani, Alexej Gossmann, and Yu-Ping Wang. Multimodal Sparse Classifier for Adolescent Brain Age Prediction. *IEEE journal of biomedical and health informatics*, June 2019. ISSN 2168-2208, 2168-2194. doi:10.1109/JBHI.2019.2925710. URL http://dx.doi.org/10.1109/JBHI.2019.2925710.

Alexej Gossmann, Pascal Zille, Vince Calhoun, and Yu-Ping Wang. FDR-Corrected Sparse Canonical Correlation Analysis with Applications to Imaging Genomics. *IEEE Transactions on Medical Imaging*, 37(8):1761–1774, August 2018a. ISSN 0278-0062, 1558-254X. doi:10.1109/TMI.2018.2815583.

Alexej Gossmann, Shaolong Cao, Damian Brzyski, Lan-Juan Zhao, Hong-Wen Deng, and Yu-Ping Wang. A sparse regression method for group-wise

feature selection with false discovery rate control. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 15(4):1066–1078, July 2018b. ISSN 1545-5963, 1557-9964. doi:10.1109/TCBB.2017.2780106.

Alexej Gossmann, Aria Pezeshk, and Berkman Sahiner. Test data reuse for evaluation of adaptive machine learning algorithms: Over-fitting to a fixed "test" dataset and a potential solution. In *Proceedings of SPIE: Medical Imaging 2018*. International Society for Optics and Photonics, March 2018c. doi:10.1117/12.2293818.

Damian Brzyski, Alexej Gossmann, Weijie Su, and Małgorzata Bogdan. Group SLOPE – Adaptive Selection of Groups of Predictors. *Journal of the American Statistical Association*, pages 1–15, January 2018. ISSN 0162-1459. doi:10.1080/01621459.2017.1411269.

Shaolong Cao, Huaizhen Qin, Alexej Gossmann, Hong-Wen Deng, and Yu-Ping Wang. Unified tests for fine-scale mapping and identifying sparse high-dimensional sequence associations. *Bioinformatics*, 32(3):330–337, February 2016. doi:10.1093/bioinformatics/btv586.

Mimi C Sammarco, Jennifer Simkin, Alexander J Cammack, Danielle Fassler, Alexej Gossmann, Luis Marrero, Michelle Lacey, Keith Van Meter, and Ken Muneoka. Hyperbaric oxygen promotes proximal bone regeneration and organized collagen composition during digit regeneration. *PloS one*, 10(10), 2015. doi:10.1371/journal.pone.0140156.

Shaolong Cao, Huaizhen Qin, Alexej Gossmann, Hong-Wen Deng, and Yu-Ping Wang. Unified tests for fine scale mapping and identifying sparse high-dimensional sequence associations. In *Proceedings of the 6th ACM Conference on Bioinformatics, Computational Biology and Health Informatics*, BCB '15, pages 241–249, New York, NY, USA, 2015. ACM. doi:10.1145/2808719.2808744.

Alexej Gossmann, Shaolong Cao, and Yu-Ping Wang. Identification of significant genetic variants via SLOPE, and its extension to Group SLOPE. In *Proceedings of the 6th ACM Conference on Bioinformatics, Computational Biology and Health Informatics*, BCB '15, pages 232–240, New York, NY, USA, 2015. ACM. doi:10.1145/2808719.2808743.