

Toygar Tanyel

List of Publications

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Author name in **bold**. † = first author, * = equal contribution (co-first author); [Q1] denotes a first-quartile journal. Citation counts, where shown, apply to preprints (which carry no venue signal); aggregate metrics (h-index, citations) are on Google Scholar.

Peer-Reviewed Journal Articles

- [1] † **T. Tanyel**, S. Atmaca, K. Gokce, M. Y. Balik, A. Guler, E. Aslanger, I. Oksuz. “Interpretable ECG Analysis for Myocardial Infarction Detection through Counterfactuals.” *Biomedical Signal Processing and Control*, 2025. [Q1]
- [2] N. Denizoglu*, **T. Tanyel***, E. C. Erkan, M. E. Seker, E. Meltem, et al. “Landmark Regression with Attention U-Net for Assessing Breast Positioning Quality in MLO Mammography View.” *Diagnostics*, 2026. [Q1]
- [3] O. Camurdan*, **T. Tanyel***, E. Aktufan Cerekci, D. Alis, E. Meltem, N. Denizoglu, et al. “Annotation-Efficient, Patch-Based, Explainable Deep Learning Using a Curriculum Method for Breast Cancer Detection in Screening Mammography.” *Insights into Imaging*, 2025. [Q1]
- [4] † **T. Tanyel**, C. Nadarajan, N. M. Duc, B. Keserci. “Deciphering Machine-Learning Decisions to Distinguish Between Posterior Fossa Tumor Types Using MRI Features.” *Cancers*, 2023. [Q1]
- [5] E. Cerekci, D. Alis, N. Denizoglu, O. Camurdan, M. E. Seker, C. Ozer, . . . , **T. Tanyel**, et al. “Quantitative Evaluation of Saliency-Based Explainable AI (XAI) Methods in Deep-Learning-Based Mammogram Analysis.” *European Journal of Radiology*, 2024. [Q1]
- [6] D. Alis, **T. Tanyel**, E. Meltem, M. E. Seker, D. Seker, H. M. Karakas, et al. “Choosing the Right Artificial Intelligence Solutions for Your Radiology Department: Key Factors to Consider.” *Diagnostic and Interventional Radiology*, 2024.
- [7] † **T. Tanyel**, B. Alkurdi, S. Ayvaz. “Developing Linguistic Patterns to Mitigate Inherent Human Bias in Offensive Language Detection.” *Turkish Journal of Electrical Engineering and Computer Sciences*, 2024.

Peer-Reviewed Conference & Workshop Papers

- [1] P. M. Konrad, **T. Tanyel**, S. Ayvaz. “A Path Already Walked: On Inheriting Network-Neuroscience Tools for Mechanistic Interpretability.” *ICML 2026 Workshop on Mechanistic Interpretability*.
- [2] P. M. Konrad, **T. Tanyel**, S. Ayvaz. “Decoded but Unused: Instruction Tuning Routes Moral Framing into the Judgment Readout.” *ICML 2026 Workshop on Mechanistic Interpretability*.
- [3] P. M. Konrad, **T. Tanyel**, S. Ayvaz. “Self-Reports Do Not Identify Self-Models: An Identifiability Test for Counterfactual Reports.” *ICML 2026 Workshop on Philosophy of Machine Learning (PhilML)*. oral
- [4] † **T. Tanyel**, N. Denizoglu, M. E. Seker, D. Alis, E. Cerekci, E. Karaarslan, et al. “Mammographic Breast Positioning Assessment via Deep Learning.” *Deep-Breast Workshop on AI and Imaging for Diagnostic and Treatment, MICCAI 2024*.
- [5] † **T. Tanyel**, G. Yildiz, C. Aydinalp, I. Oksuz. “Estimation of Two-Dimensional Electric Field Distribution Through Deep Learning: Preliminary Study.” *32nd IEEE Signal Processing and Communications Applications Conference (SIU)*, 2024.
- [6] † **T. Tanyel**, B. Alkurdi, S. Ayvaz. “Linguistic-Based Data Augmentation Approach for Offensive Language Detection.” *7th Int. Conf. on Computer Science and Engineering (UBMK)*, 2022.
- [7] P. M. Konrad, **T. Tanyel**, S. Ayvaz. “Beyond Major Floods: Deep Learning for Detecting Shallow Water Inundation in Agricultural Areas.” *Int. Conf. on Knowledge-Based and Intelligent Information & Engineering Systems (KES)*, Procedia Computer Science, 2025.
- [8] G. Babur Guler, Y. A. Er, A. Guler, H. Uysal, A. K. Kalkan, **T. Tanyel**, M. Erturk, et al. “Transfer Learning for Echocardiographic Detection of HFpEF: Preliminary Results of the TALE-HFpEF Study.” *European Heart Journal – Cardiovascular Imaging*, 2025. abstract

Book Chapter

- [1] † **T. Tanyel**, I. Oksuz. “Evaluation of Explainability Methods in Medical Image Analysis.” In *Explainable Machine Intelligence in Healthcare*, 2025.

Preprints & Manuscripts Under Review

- [1] P. M. Konrad, **T. Tanyel**, S. Ayvaz. “Routing Subspaces: Auditing Evaluation-to-Deployment Mismatch in Fine-Tuned Language Models.” *NeurIPS 2026*. under review
- [2] P. M. Konrad, T. L. Adam, A. C. H. Merrild, R. Terrenzi, R. De Rosa, **T. Tanyel**, S. Ayvaz. “The Open-Box Fallacy: Why AI Deployment Needs a Calibrated Verification Regime.” *NeurIPS 2026 Position Paper Track*. under review

- [3] † **T. Tanyel**, S. Ayvaz, B. Keserci. “Beyond Known Reality: Exploiting Counterfactual Explanations for Medical Research.” *arXiv:2307.02131*, 2023. 22 citations
- [4] P. M. Konrad, **T. Tanyel**, S. Ayvaz. “Acceptance Cards: A Four-Diagnostic Standard for Safe Fine-Tuning Defense Claims.” *arXiv preprint*, 2026.