

Die Zukunft der Tierarztpraxis

Was ist schon möglich?

ÖTK – Zukunftstalk Stakeholder-Empfang der Österreichischen Tierärztekammer

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... wie alles begann ...



TECHNOLOGIEN

"I Want to Hold Your Hand"





Der erste klinische CT-Scanner "EMI Mark 1" von 1971

Bildquelle: Philipcosson via Wikimedia Commons



Bildquelle: Eric Koch/Anefo via Wikimedia Commons

CLOUD COMPUTING / TELERADIOLOGIE





"HUMAN ERROR"

Human Factors Drive Radiology Error Rates

Human neurobiology and neurocognition may be at the root cause of errors

"Humans did not evolve through millions of years of selective pressure to practice radiology," Dr. Bruno said. "Our eyes and brain are not optimized for it; it's actually amazing that we do as well as we do."

> "We have a field that a radiologist of 1949 would not recognize and yet the error rate is the same. That suggests that what we're dealing with is a human factor that doesn't change with improved technology or improved knowledge."

MICHAEL A. BRUNO, MD



within the chest CT scan.



SMARTE (KI) TOOLS













Received: 23 November 2021 | Revised: 16 February 2022 | Accepted: 30 March 2022

DOI: 10.1111/vru.13159 WILEY INVITED REVIEW Evaluating artificial intelligence algorithms for use in veterinary radiology Steve Joslyn¹ | Kate Alexander² Preprints are preliminary reports that have not undergone peer review. They should not be considered conclusive, used to inform clinical practice, need by the media as validated information An AI-based algorithm for the automatic evaluation of image quality in canine thoracic radiographs INVITED REVIEW 🖻 Open Access 💿 🕢 First, do no harm. Ethical and legal issues of artificial intelligence and machine learning in veterinary radiology and radiation oncology Q Related Papers S Chat with paper Save Eli B. Cohen 🔀, Ira K. Gordon

Received; 3 August 2021. Revised; 3 December 2021 Accepted; 9 January 2022. DOI 10.1111/vru.13157 INVITED COMMENTARY The role of artificial intelligence in clinical imaging and workflows Diane U. Wilson¹ Michael Q Bailey² John Craig³

25 July 2023

Automatic classification of symmetry of hemithoraces in canine and feline radiographs

Peyman Tahghighi, Nicole Norena, Eran Ukwatta, Ryan B. Appleby, Amin Korneili Author Affiliations +

Journal of Medical Imaging, Vol. 10, Issue 4, 044004 (July 2023). https://doi.org/10.1117/1.JMI.10.4.044004

WILEY



KI BERICHTE

"Our findings suggest that AI performs almost as well as the best veterinary radiologist in all settings of descriptive radiographic findings. However, its strengths lie more in confirming normality than detecting abnormalities, and it does not provide differential diagnoses"



Comparison of radiological interpretation made by veterinary radiologists and stateof-the-art commercial AI software for canine and feline radiographic studies Front. Vet. Sci., 21 February 2025 Sec. Veterinary Imaging









DENOISING (BSP HAWKAI)





LARGE LANGUAGE MODELS

When comparing diagnostic performances, ChatGPT-40 achieved an AUC of 57.0% (95% CI: 48.6–65.5%), slightly outperforming Claude 3-Opus, which had an AUC of 52.0% (95% CI: 43.2–60.9%). However, the difference between their performances was not statistically significant (*P* = 0.393). Both LLMs exhibited significantly lower diagnostic performance compared to the junior radiologist, who achieved an AUC of 72.4%



Assessing the feasibility of ChatGPT-40 and Claude 3-Opus in thyroid nodule classification based on ultrasound images, Published: 11 October 2024, Volume 87, pages 1041–1049, (2025)

Large language models for error detection in radiology reports: a comparative analysis between closed-source and privacy-compliant open-source models- Imaging Informatics and Artificial Intelligence Published: 20 February 2025

Closed-source LLMs achieved higher error detection rates than open-source LLMs (GPT-4o: 88% [348/397; 95% CI: 86, 92], GPT-4: 83% [328/397; 95% CI: 80, 87], Llama 3-70b: 79% [311/397; 95% CI: 76, 83], Mixtral 8x22b: 73% [288/397; 95% CI: 68, 77]; p < 0.001).



Privacy-compliant open-source LLMs can balance data privacy and accuracy in automating medical proofreading for clinical practice.



"WE CAN'T PREDICT THE FUTURE BUT, WE CAN PREPARE FOR IT"









