



## Christian Bluethgen

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### Bio

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#### CLINICAL FOCUS

- Diagnostic Radiology

#### ACADEMIC APPOINTMENTS

- Assistant Professor - University Medical Line, Radiology

#### PROFESSIONAL EDUCATION

- Board Certification: Diagnostic Radiology, Swiss Medical Federation FMH (2023)
- Residency: University Hospital Zurich (2021) Switzerland
- Medical Education: University of Heidelberg (2015) Germany

### Publications

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#### PUBLICATIONS

- **Merlin: a computed tomography vision-language foundation model and dataset.** *Nature*  
Blankemeier, L., Kumar, A., Cohen, J. P., Liu, J., Liu, L., Van Veen, D., Gardezi, S. J., Yu, H., Paschali, M., Chen, Z., Delbrouck, J. B., Reis, E., Holland, et al  
2026
- **Reporting checklist for foundation and large language models in medical research (REFINE): an international consensus guideline.** *Diagnostic and interventional radiology (Ankara, Turkey)*  
Mese, I., Akinci D'Antonoli, T., Bluethgen, C., Bressemer, K., Cuocolo, R., Chaudhari, A., Tejani, A. S., Isaac, A., Ponsiglione, A., Meddeb, A., Khosravi, B., Le Guellec, B., Kahn, et al  
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- **Generalist foundation models from a multimodal dataset for 3D computed tomography.** *Nature biomedical engineering*  
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2026
- **Guidelines for Reporting Studies on Large Language Models in Radiology: An International Delphi Expert Survey.** *Radiology*

- Kottlors, J., Iuga, A. I., Bluethgen, C., Bressemer, K., Kather, J. N., Moy, L., Wald, C., Wang, W., Liu, T., Ranschaert, E., Dratsch, T., Kleesiek, J., Gertz, et al  
2026; 318 (2): e250913
- **Automated lung texture analysis for assessing interstitial lung disease in systemic sclerosis: Diagnostic accuracy in photon-counting-detector and conventional energy-integrating-detector CT.** *European journal of radiology*  
Happe, J., Bruni, C., Jungblut, L., Landini, N., Strappa, C., Bluethgen, C., Elhai, M., Dobrota, R., Mihai, C., Muraru, S., Hoffmann-Vold, A. M., Larici, A. R., Frauenfelder, et al  
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  - **Improving Performance, Robustness, and Fairness of Radiographic AI Models with Finely-Controllable Synthetic Data.** *Research square*  
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2025
  - **The Effect of X-ray Dose Photon-Counting Detector Computed Tomography on Nodule Properties in a Lung Cancer Screening Cohort** *INVESTIGATIVE RADIOLOGY*  
Kerber, B., Ensle, F., Kroschke, J., Strappa, C., Stolzmann-Hinzpeter, R., Bluethgen, C., Marty, M., Larici, A., Frauenfelder, T., Jungblut, L.  
2025; 60 (10): 627-635
  - **Generative Artificial Intelligence Increases Radiograph Reporting Efficiency.** *AJR. American journal of roentgenology*  
Bluethgen, C.  
2025
  - **Foundation models for radiology: fundamentals, applications, opportunities, challenges, risks, and prospects.** *Diagnostic and interventional radiology (Ankara, Turkey)*  
Akinci D'Antonoli, T., Bluethgen, C., Cuocolo, R., Klontzas, M. E., Ponsiglione, A., Kocak, B.  
2025
  - **Cybersecurity Threats and Mitigation Strategies for Large Language Models in Health Care.** *Radiology. Artificial intelligence*  
Akinci D'Antonoli, T., Tejani, A. S., Khosravi, B., Bluethgen, C., Busch, F., Bressemer, K. K., Adams, L. C., Moassefi, M., Faghani, S., Gichoya, J. W.  
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  - **Best Practices for Large Language Models in Radiology.** *Radiology*  
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  - **GenerateCT: Text-Conditional Generation of 3D Chest CT Volumes**  
Hamamci, I., Ere, S., Sekuboyina, A., Simsar, E., Tezcan, A., Simsek, A., Esirgun, S., Almas, F., Dogan, I., Dasdelen, M., Prabhakar, C., Reynaud, H., Pati, et al  
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  - **Automated Structured Radiology Report Generation**  
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  - **CheXalign: Preference fine-tuning in chest X-ray interpretation models without human feedback**  
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- **Evaluating and Improving the Effectiveness of Synthetic Chest X-Rays for Medical Image Analysis**  
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- **A dataset and benchmark for hospital course summarization with adapted large language models.** *Journal of the American Medical Informatics Association : JAMIA*  
Aali, A., Van Veen, D., Arefeen, Y. I., Hom, J., Bluethgen, C., Reis, E. P., Gatidis, S., Clifford, N., Daws, J., Tehrani, A. S., Kim, J., Chaudhari, A. S.  
2024
- **Reconstruction of patient-specific confounders in AI-based radiologic image interpretation** *CELL REPORTS MEDICINE*  
Han, T., Zigutyte, L., Huck, L., Huppertz, M., Siepmann, R., Gandelsma, Y., Bluethgen, C., Khader, F., Kuhl, C., Nebelung, S., Kather, J., Truhn, D.  
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- **A New Era of Text Mining in Radiology with Privacy-Preserving LLMs.** *Radiology. Artificial intelligence*  
Akinci D'Antonoli, T., Bluethgen, C.  
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- **Merlin: A Vision Language Foundation Model for 3D Computed Tomography.** *Research square*  
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- **Adapted large language models can outperform medical experts in clinical text summarization.** *Nature medicine*  
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- **Reconsidering Conclusions of Bias Assessment in Medical Imaging Foundation Models.** *Radiology. Artificial intelligence*  
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- **Clinical Text Summarization: Adapting Large Language Models Can Outperform Human Experts.** *Research square*  
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- **External validation, radiological evaluation, and development of deep learning automatic lung segmentation in contrast-enhanced chest CT.** *European radiology*  
Dwivedi, K., Sharkey, M., Alabed, S., Langlotz, C. P., Swift, A. J., Bluethgen, C.  
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- **FDA-cleared artificial intelligence and machine learning-based medical devices and their 510(k) predicate networks.** *The Lancet. Digital health*  
Muehlematter, U. J., Bluethgen, C., Vokinger, K. N.  
2023; 5 (9): e618-e626
- **FDA-cleared artificial intelligence and machine learning-based medical devices and their 510(k) predicate networks** *LANCET DIGITAL HEALTH*  
Muehlematter, U. J., Bluethgen, C., Vokinger, K. N.  
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- **Does GPT4 dream of counting electric nodules?** *EUROPEAN RADIOLOGY*  
Bluthgen, C.  
2023
- **Added value of ultra-short echo time and fast field echo using restricted echo-spacing MR imaging in the assessment of the osseous cervical spine** *RADIOLOGIA MEDICA*  
Deininger-Czermak, E., Gascho, D., Franckenberg, S., Kalin, P., Bluthgen, C., Villefort, C., Thali, M. J., Guggenberger, R.  
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- **Fully automated breast segmentation on spiral breast computed tomography images** *JOURNAL OF APPLIED CLINICAL MEDICAL PHYSICS*  
Shim, S., Cester, D., Ruby, L., Bluethgen, C., Marcon, M., Berger, N., Unkelbach, J., Boss, A.  
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- **Influence of CT Image Matrix Size and Kernel Type on the Assessment of HRCT in Patients with SSC-ILD** *DIAGNOSTICS*  
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- **Comparison of detection of trauma-related injuries using combined "all-in-one" fused images and conventionally reconstructed images in acute trauma CT** *EUROPEAN RADIOLOGY*  
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- **Sarcopenia, Precardial Adipose Tissue and High Tumor Volume as Outcome Predictors in Surgically Treated Pleural Mesothelioma** *DIAGNOSTICS*  
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- **Simplified image acquisition and detection of ischemic and non-ischemic myocardial fibrosis with fixed short inversion time magnetic resonance late gadolinium enhancement** *BRITISH JOURNAL OF RADIOLOGY*  
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- **First Performance Evaluation of an Artificial Intelligence-Based Computer-Aided Detection System for Pulmonary Nodule Evaluation in Dual-Source Photon-Counting Detector CT at Different Low-Dose Levels.** *Investigative radiology*  
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- **Impact of Vessel Suppressed-CT on Diagnostic Accuracy in Detection of Pulmonary Metastasis and Reading Time** *ACADEMIC RADIOLOGY*  
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- **Lung Nodules in Melanoma Patients: Morphologic Criteria to Differentiate Non-Metastatic and Metastatic Lesions** *DIAGNOSTICS*  
Stadelmann, S., Bluethgen, C., Milanese, G., Nguyen-Kim, T., Maul, J., Dummer, R., Frauenfelder, T., Eberhard, M.  
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- **Computed tomography radiomics for the prediction of thymic epithelial tumor histology, TNM stage and myasthenia gravis.** *PloS one*  
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- **Accuracy of Conventional and Machine Learning Enhanced Chest Radiography for the Assessment of COVID-19 Pneumonia: Intra-Individual Comparison with CT** *JOURNAL OF CLINICAL MEDICINE*  
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- **Sarcopenia as independent risk factor of postpneumectomy respiratory failure, ARDS and mortality** *LUNG CANCER*  
Martini, K., Chassagnon, G., Fournel, L., Prieto, M., Trieu-Nghi Hoang-Thi, Halm, N., Bobbio, A., Revel, M., Alifano, M.  
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- **Brown fat does not cause cachexia in cancer patients: A large retrospective longitudinal FDG-PET/CT cohort study** *PLOS ONE*  
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- **Applicability of radiomics in interstitial lung disease associated with systemic sclerosis: proof of concept** *EUROPEAN RADIOLOGY*  
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- **Comparison of the PI-RADS 2.1 scoring system to PI-RADS 2.0: Impact on diagnostic accuracy and inter-reader agreement** *PLOS ONE*  
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2020; 15 (10): e0239975
- **Patterns of organizing pneumonia and microinfarcts as surrogate for endothelial disruption and microangiopathic thromboembolic events in patients with coronavirus disease 2019** *PLOS ONE*  
Martini, K., Bluthgen, C., Walter, J., Nguyen-Kim, T., Thienemann, F., Frauenfelder, T.  
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- **Comparison of 3D and 2D late gadolinium enhancement magnetic resonance imaging in patients with acute and chronic myocarditis** *INTERNATIONAL JOURNAL OF CARDIOVASCULAR IMAGING*  
Polacin, M., Kapos, I., Gastl, M., Bluethgen, C., Karolyi, M., von Spiczak, J., Eberhard, M., Baessler, B., Alkadhi, H., Kozerke, S., Manka, R.  
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Schniering, J., Maciukiewicz, M., Gabrys, H., Brunner, M., Bluthgen, C., Distler, O., Guckenberger, M., Frauenfelder, T., Tanadini-Lang, S., Maurer, B.  
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- **Detection and localization of distal radius fractures: Deep learning system versus radiologists** *EUROPEAN JOURNAL OF RADIOLOGY*  
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- **Deep learning for automatic quantification of lung abnormalities in COVID-19 patients: First experience and correlation with clinical parameters** *EUROPEAN JOURNAL OF RADIOLOGY OPEN*  
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- **Lung cancer screening with submillisievert chest CT: Potential pitfalls of pulmonary findings in different readers with various experience levels** *EUROPEAN JOURNAL OF RADIOLOGY*  
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- **Economical Sponge Phantom for Teaching, Understanding, and Researching A- and B-Line Reverberation Artifacts in Lung Ultrasound** *JOURNAL OF ULTRASOUND IN MEDICINE*  
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