

Publication List – Constantin Seibold

Peer-Reviewed Conference Publications

1. **Anatomy-guided Pathology Segmentation**, Alexander Jaus, **Constantin Seibold**, Simon Reiß, Lukas Heine, Anton Schily, Moon Kim, Fin Hendrik Bahnsen, Ken Herrmann, Rainer Stiefelhofen, Jens Kleesiek, MICCAI, 2025
2. **Towards unifying anatomy segmentation: automated generation of a full-body CT dataset via knowledge aggregation and anatomical guidelines**, Alexander Jaus*, **Constantin Seibold***, Kelsey Hermann, Alexandra Walter, Kristina Giske, Johannes Haubold, Jens Kleesiek, Rainer Stiefelhofen, ICIP, 2024
3. **FootCapture: Towards an AR-based System for 3D Foot Object Acquisition through Photogrammetry**, Valentin Khan-Blouki, Franziska Seiz, Nicolas Walter, Alexander Jaus, Zdravko Marinov, Gijs Luijten, Jan Egger, **Constantin Seibold**, Dirk Solte, Jens Kleesiek, Rainer Stiefelhofen, MIDL, 2024
4. **Style Transfer and Pseudo-Label Filtering Improve Transferability in Cell Organelle Segmentation Scenarios**, Dmitrii Seletkov, Simon Reiß, Alexander Freytag, **Constantin Seibold**, Rainer Stiefelhofen, ISBI, 2024
5. **Enhancing Contrastive Training for Semi-Supervised Chest X-Ray Analysis Through Gaussian Mixture Models**, Phuong Quynh Le, Jens Kleesiek, **Constantin Seibold**, ISBI, 2024
6. **IKIM at MEDIQA-M3G 2024: Multilingual Visual Question-Answering for Dermatology through VLM Fine-tuning and LLM Translations**, Marie Bauer, Amin Dada, **Constantin Seibold**, Jens Kleesiek, Proceedings of the 6th Clinical Natural Language Processing Workshop, 2024 🏆 (First Place Solution: Spanish, Chinese)
7. **Autopet III challenge: Incorporating anatomical knowledge into nnUNet for lesion segmentation in PET/CT**, Hamza Kalisch, Fabian Hörst, Ken Herrmann, Jens Kleesiek, **Constantin Seibold**, MICCAI - AutoPET III, 2024 🏆 (Second Place Solution: Model Track), 2024
8. **Every Component Counts: Rethinking the Measure of Success for Medical Semantic Segmentation in Multi-Instance Segmentation Tasks**, Alexander Jaus, **Constantin Seibold**, Simon Reiß, Zdravko Marinov, Keyi Li, Zeling Ye, Stefan Krieg, Jens Kleesiek, Rainer Stiefelhofen, AAAI, 2024
9. **Multimodal Interactive Lung Lesion Segmentation: A Framework for Annotating PET/CT Images based on Physiological and Anatomical Cues**, Verena Jasmin Hallitschke, Tobias Schlumberger, Philipp Kataliakos, Zdravko Marinov, Moon Kim, Lars Heiliger, **Constantin Seibold**, Jens Kleesiek, Rainer Stiefelhofen, ISBI, Oral Paper
10. **Decoupled Semantic Prototypes enable learning from diverse annotation types for semi-weakly segmentation in expert-driven domains**, Simon Reiß, **Constantin Seibold**, Alexander Freytag, Erik Rodner, Rainer Stiefelhofen, CVPR, 2023

11. **On the Impact of Cross-Domain Data on German Language Models**, Amin Dada, Aokun Chen, Cheng Peng, Kaleb E Smith, Ahmad Idrissi-Yaghir, **Constantin Seibold**, Jianning Li, Lars Heiliger, Christoph M Friedrich, Daniel Truhn, Jan Egger, Jiang Bian, Jens Kleesiek, Yonghui Wu, EMNLP, 2023
12. **Flying guide dog: Walkable path discovery for the visually impaired utilizing drones and transformer-based semantic segmentation**, Haobin Tan, Chang Chen, Xinyu Luo, Jiaming Zhang, **Constantin Seibold**, Kailun Yang, Rainer Stiefelwagen, IEEE ROBIO, 2022
13. **Reference-guided Pseudo-Label Generation for Medical Semantic Segmentation**, **Constantin Seibold**, Simon Reiß, Jens Kleesiek, Rainer Stiefelwagen, AAAI, 2022
14. **Hierarchical nearest neighbor graph embedding for efficient dimensionality reduction**, Saquib Sarfraz, Marios Koulakis, **Constantin Seibold**, Rainer Stiefelwagen, CVPR, 2022
15. **Towards Automatic Parsing of Structured Visual Content through the Use of Synthetic Data**, Lukas Scholch, Jonas Steinhauser, Maximilian Beichter, **Constantin Seibold**, Kailun Yang, Merlin Knäble, Thorsten Schwarz, Alexander Mädche, Rainer Stiefelwagen, ICPR, 2022
16. **Deep Learning-basierte Synthese virtueller monoenergetischer Bilder zur Optimierung einer automatisierten Detektion von Lungenarterienembolien in konventionellen CT-Scans**, Matthias A Fink, **Constantin Seibold**, Hans-Ulrich Kauczor, Rainer Stiefelwagen, Jens Kleesiek, RöFo-Fortschritte auf dem Gebiet der Röntgenstrahlen und der bildgebenden Verfahren, 2022
17. **Breaking with Fixed Set Pathology Recognition through Report-Guided Contrastive Training**, **Constantin Seibold**, Simon Reiß, Saquib Sarfraz, Rainer Stiefelwagen, Jens Kleesiek, MICCAI, 2022
18. **Graph-constrained Contrastive Regularization for Semi-weakly Volumetric Segmentation**, Simon Reiß, **Constantin Seibold**, Alexander Freytag, Erik Rodner, Rainer Stiefelwagen, ECCV, 2022
19. **Detailed Annotations of Chest X-Rays via CT Projection for Report Understanding**, **Constantin Seibold**, Simon Reiß, Saquib Sarfraz, Matthias A Fink, Victoria Mayer, Jan Sellner, Moon Sung Kim, Klaus H Maier-Hein, Jens Kleesiek, Rainer Stiefelwagen, BMVC, 2022
20. **Every annotation counts: Multi-label deep supervision for medical image segmentation**, Simon Reiß, **Constantin Seibold**, Alexander Freytag, Erik Rodner, Rainer Stiefelwagen, CVPR, 2021
21. **Prediction of low-keV monochromatic images from polyenergetic CT scans for improved automatic detection of pulmonary embolism**, **Constantin Seibold**, Matthias A Fink, Charlotte Goos, Hans-Ulrich Kauczor, Heinz-Peter Schlemmer, Rainer Stiefelwagen, Jens Kleesiek, ISBI, 2021
22. **Pose2Drone: A Skeleton-Pose-based Framework for Human-Drone Interaction**, Zdravko Marinov, Stanka Vasileva, Qing Wang, **Constantin Seibold**, Jiaming Zhang, Rainer Stiefelwagen, EUSIPCO, 2021
23. **Let's Play for Action: Recognizing Activities of Daily Living by Learning from Life Simulation Video Games**, Alina Roitberg, David Schneider, Aulia Djamal, **Constantin Seibold**, Simon Reiß, Rainer Stiefelwagen, IROS, 2021
24. **Self-Guided Multiple Instance Learning for Weakly Supervised Thoracic Disease Classification and Localization in Chest Radiographs**, **Constantin Seibold**, Jens Kleesiek, Heinz-Peter Schlemmer, Rainer Stiefelwagen, ACCV, 2020

25. **Content and Colour Distillation for Learning Image Translations with the Spatial Profile Loss**, Saquib Sarfraz, **Constantin Seibold**, Haroon Khalid, Rainer Stiefelhagen, BMVC, 2019 🏆 (Best Industry Paper)

Journal Publications

1. **Why does my medical AI look at pictures of birds? Exploring the efficacy of transfer learning across domain boundaries**, Frederic Jonske, Moon Kim, Enrico Nasca, Janis Evers, Johannes Haubold, René Hosch, Felix Nensa, Michael Kamp, **Constantin Seibold**, Jan Egger, Jens Kleesiek, Computer Methods and Programs in Biomedicine, 2025
2. **MedShapeNet--A Large-Scale Dataset of 3D Medical Shapes for Computer Vision**, Jianning Li et al., Biomedical Engineering/Biomedizinische Technik, 2025
3. **Cellvit: Vision transformers for precise cell segmentation and classification**, Fabian Hörst, Moritz Rempe, Lukas Heine, **Constantin Seibold**, Julius Keyl, Giulia Baldini, Selma Ugurel, Jens Siveke, Barbara Grünwald, Jan Egger, Jens Kleesiek, Medical Image Analysis, 2024
4. **Is There a Role of Artificial Intelligence in Preclinical Imaging?**, Alina Küper, Paul Blanc-Durand, Andrei Gafita, David Kersting, Wolfgang P Fendler, **Constantin Seibold**, Alexandros Moraitis, Katharina Lückerrath, Michelle L James, Robert Seifert, Seminars in Nuclear Medicine, 2023
5. **Valuing Vicinity: Memory attention framework for context-based semantic segmentation in histopathology**, Oliver Ester, Fabian Hörst, **Constantin Seibold**, Julius Keyl, Saskia Ting, Nikolaos Vasileiadis, Jessica Schmitz, Philipp Ivanyi, Viktor Grünwald, Jan Hinrich Bräsen, Jan Egger, Jens Kleesiek, Computerized Medical Imaging and Graphics, 2023
6. **CT angiography clot burden score from data mining of structured reports for pulmonary embolism**, Matthias A. Fink, Victoria L. Mayer, Thomas Schneider, **Constantin Seibold**, Rainer Stiefelhagen, Jens Kleesiek, Tim F. Weber, Hans-Ulrich Kauczor, Radiology, 2022
7. **Jointly Optimized Deep Neural Networks to Synthesize Monoenergetic Images from Single-Energy CT Angiography for Improving Classification of Pulmonary Embolism**, Matthias A Fink, **Constantin Seibold**, Hans-Ulrich Kauczor, Rainer Stiefelhagen, Jens Kleesiek, Diagnostics, 2022
8. **A reporting and analysis framework for structured evaluation of COVID-19 clinical and imaging data**, Gabriel Alexander Salg et al., npj Digital Medicine, 2021

Preprints

1. **Foreign object segmentation in chest x-rays through anatomy-guided shape insertion**, **Constantin Seibold**, Hamza Kalisch, Lukas Heine, Simon Reiß, Jens Kleesiek, Pre-Print, 2025
2. **CLUE: A Clinical Language Understanding Evaluation for LLMs**, Amin Dada, Marie Bauer, Amanda Butler Contreras, Osman Alperen Koraş, **Constantin Seibold**, Kaleb E Smith, Jens Kleesiek, Pre-Print, 2024
3. **Tumor likelihood estimation on MRI prostate data by utilizing k-Space information**, Moritz Rempe, Fabian Hörst, **Constantin Seibold**, Boris Hadaschik, Marco Schlimbach, Jan Egger, Kevin Kröninger, Felix Breuer, Martin Blaimer, Jens Kleesiek, Pre-Print, 2024

4. **De-Identification of Medical Imaging Data: A Comprehensive Tool for Ensuring Patient Privacy**, Moritz Rempe, Lukas Heine, **Constantin Seibold** , Fabian Hörst, Jens Kleesiek, Pre-Print, 2024
5. **Towards Synthetic Data Generation for Improved Pain Recognition in Videos under Patient Constraints**, Jonas Nasimzada, Jens Kleesiek, Ken Herrmann, Alina Roitberg, **Constantin Seibold** , Pre-Print, 2024
6. **Spacewalker: Traversing Representation Spaces for Fast Interactive Exploration and Annotation of Unstructured Data**, Lukas Heine, Fabian Hörst, Jana Fragemann, Gijs Luijten, Miriam Balzer, Jan Egger, Fin Bahnsen, Saquib Sarfraz, Jens Kleesiek, **Constantin Seibold** , Pre-Print, 2024
7. **Accurate Fine-Grained Segmentation of Human Anatomy in Radiographs via Volumetric Pseudo-Labeling**, **Constantin Seibold** , Alexander Jaus, Matthias A Fink, Moon Kim, Simon Reiß, Ken Herrmann, Jens Kleesiek, Rainer Stiefelhagen, Pre-Print, 2023