



Martijn P. A. Starmans

PostDoc AI for Integrated Diagnostics in Medical Imaging

Experience

Mail

m.starmans@
erasmusmc.nl

Web & Git

- mstarmans91.github.io
- bigr.nl/member/martijn
- Martijn P. A. Starmans
- MStarmans91
- 0000-0001-5086-7153
- martijn-starmans
- MartijnStarmans

Consortia

Current:

- Liver AI (LAI)
- Co-initiator and lead
Sarcoma AI (SAI)
- Co-initiator and lead
H2020 EuCanImage
(WP Lead)

H2021 EOSC4Cancer

- WP Lead
- RadioVal
- External Advisor
- EUCAIM

Past:

H2020 euCanShare

09/21 - Now **PostDoc**

Erasmus Medical Center, Rotterdam, NL

Extending the work of his PhD, Martijn's research line focuses on generalization of radiomics and pathomics biomarkers (conventional and deep learning based) using automated machine learning and meta-learning. He works on a variety of clinical applications (e.g. sarcoma, liver cancer, colorectal cancer, bladder cancer, melanoma, cardiomyopathy, neuroendocrine tumors, CRPS).

- **Collaboration and awards:** Martijn is involved in various working groups and is work package leader in the Horizon 2020 EuCanImage and Horizon 2021 EOSC4Cancer projects. He is recipient of various grants and initiator of the Sarcoma Artificial Intelligence (SAI) consortium (Hanarth Fonds 400k grant), the Liver AI (LAI) consortium (NWO OTP 1M grant), a Health-Holland 1M TKI grant in incidental pulmonary embolism, and project lead of the Colorectal Liver Metastes AI (COLIMA) consortium (grant submitted). In these consortia, in total 51 clinical centers, companies, professional- and patient associations from 18 countries are united. Additionally, he is external advisor of RadioVal, member of the AI4HI AI Development working group and EUCAIM, and a MICCAI 2024 Tutorial Chair.
- **Management:** Co-developer of Imaging Office of department of Radiology and Nuclear Medicine.
- **Supervision:** 7 PhD students and 19 MSc students.

10/22 - 01/23 **Visiting Postdoctoral Researcher**

University of Barcelona, Barcelona, Spain

Martijn is visiting the Artificial Intelligence in Medicine group, Department of Mathematics and Informatics, of Prof. Dr. Karim Lekadir to collaborate on AI for oncology imaging within the context of the EuCanImage and euCan-SHare projects. Besides working on these projects, he is collaborating with various group members the FUTURE-AI guiding principles, radiomics FAIRness, and deep learning FAIRness.

10/16 - 08/21 **PhD Candidate**

Erasmus Medical Center, Rotterdam, NL

Thesis defended 1st of February 2022 "cum laude" with the title "Streamlined Quantitative Imaging Biomarker Development: Generalization of radiomics through automated machine learning". Nominated for the Frederik Philipsprijs 2022 for Best Dutch Radiology PhD Thesis and made the top five.

- **Generalization:** Martijn's radiomics framework has been successful in finding biomarkers in over 17 clinical applications and is now being used in over 25 studies by colleagues, other researchers, and companies.
- **Open-science:** Released the software for all his studies open source (e.g. WORC radiomics toolbox) and a large public database of 930 patients
- **Supervision:** 26 MSc/BSc students.

06/16 - 08/16	Internship	Philips Healthcare, Best, NL
	Stitching of 2-D fluoroscopy images for fracture malalignment reduction.	
09/15 - 04/16	MSc Thesis	Quantitative Imaging, Delft University of Technology, Delft, NL
	Deformable registration in 3D Breast Ultrasound scans.	

Grants & Awards

2023	Research Grant - co-applicant¹	NWO Open Technology Program
	•Topic: The Liver Artificial Intelligence (LAI) consortium: a benchmark dataset and optimized machine learning methods for MRI-based diagnosis of solid appearing liver lesions.	
	•Total funding: 1M Euro.	
2023	Research Grant - co-applicant	Health-Holland TKI
	•Topic: An artificial intelligence (AI)-based model for detection of incidental pulmonary embolism in chest CTs	
	•Total funding: 1M Euro.	
2021	Open Research Award	Convergence Health & Technology
2020	Research Grant - co-applicant¹	Hanarth Fonds
	•Topic: Automatic grading and phenotyping of soft-tissue tumors through machine learning to guide personalized cancer treatment.	
	•Total funding: 400k Euro.	
2019	Employee of the Year	Department of Radiology and Nuclear Medicine, Erasmus MC
	Honorable Mention	
10/2017	Challenge Winner	Colorectal liver metastases survival prediction challenge Hosted at Medical Image Computing and Computer Assisted Intervention (MICCAI) 2017.

¹ Not officially mentioned as co-applicant due to formalities. Reference of formal applicant available upon request.

Education

09/14 - 08/16	MSc Applied Physics	Delft University of Technology, Delft, NL
	GPA: 8.0 / 10. Track: Imaging Physics, Specialization: Research and Development	
	Electives: Medical Imaging, Advanced Wave Propagation, Charged Particle Optics and Imaging Systems	
09/14 - 08/16	MSc Applied Physics Honours Track	Delft University of Technology, Delft, NL
	GPA: 7.6 / 10. Track: Quantum Nanoscience	
	Electives: Applications of Quantum Mechanics, Electronics for Quantum Computing	

09/10 - 08/13 **BSc Applied Physics**

Delft University of Technology, Delft, NL

GPA: 7.6 / 10. Minor: Management in a high-tech environment, final project for Damen Shipyards, Thales Netherlands and Imtech (GPA: 8.0/10)

09/04 - 06/10 **High School**

Gymnasium Felisenum, Velsen, NL

GPA: 8.2 / 10 (cum laude)

Teaching

2023 **Summer School on AI for Medical Imaging**

AFRICAI / MICCAI

Part of program committee and mentor in this 1st AFRICAI / MICCAI summer school. Responsible for the Model Development 2: Model-Centric AI and Writing: Results sections.

2023 **Rotterdam Radiology Artificial Intelligence Course**

Dutch Society of

Radiology

Invited lecturer and panel member in this first edition of the course.

2023 - now **Advanced Digital Image Processing**

MSc Applied Physics, TU Delft

Teaching four guest lectures on Deep Learning in Medical Imaging, including help in examination.

2020 - 2023 **Machine Learning**

MSc Technical Medicine, TU Delft

Co-initiator and co-developer. Current tasks include giving lectures, supervising programming assignments, and examination.

2017 - 2023 **Advanced Image Processing**

MSc Technical Medicine, TU Delft

Co-initiator and co-developer. Current tasks include giving lectures, supervising programming assignments, and examination.

2017 - Now **Image Processing**

BSc Technical Medicine, TU Delft

Current tasks include giving lectures, supervising programming assignments, and examination.

Invited Presentations

M. P. A. Starmans[†], *Ai and image analysis of liver metastases*, Invited keynote presentation at the Liver Metastases Research Network (LMRN) Annual Meeting 2023, Brussels, Belgium, Jun. 2023.

—, *EuCanImage: Towards a european cancer imaging platform for enhanced artificial intelligence in oncology*, Invited presentation at the European Congress of Radiology (ECR) 2023, Vienna, Austria, Mar. 2023.

—, *Zijn we dan artificieel intelligent met mammografie/mri*, Invited keynote presentation at this regional Breast Cancer meeting of Healthcare providers, May 2023.

—, *Current status and future outlook on artificial intelligence in radiological imaging for liver metastases*, Presented at the Liver Metastases Research Network (LMRN) Annual Meeting 2022, Sheffield, UK, Jun. 2022.

—, *Eucanimage data platform and catalogue for cancer imaging and non-imaging data*, Presented for the RadioVal Consortium, Nov. 2022.

—, *Technical and organizational obstacles and solutions for a secure data platform in cancer imaging*, Presented at the EuCanImage Webinar 2022. Additionally panalist in three sessions of the four (sharing, anonymization, and annotation), Nov. 2022.

—, *Multicentre studies for more robust radiomics signatures*, Presented at the European Congress of Radiology (ECR) 2021, Mar. 2021.

M. P. A. Starmans[†] and M. Koek[†], *Reproducible radiomics through automated machine learning validated on twelve clinical applications*, Presented at the Euro-Bioimaging User Forum 2021: Understanding and Fighting Cancer, Jun. 2021.

M. P. A. Starmans[†], *Multicentre studies for more robust radiomics signatures*, Presented at the European Congress of Radiology (ECR) 2020, Jul. 2020.

M. P. A. Starmans[†], S. R. van der Voort, W. J. Niessen, and S. Klein, *A radiomics approach for colorectal liver metastases survival prediction*, Presented at the MICCAI 2017 - CPM Colorectal Liver Metastases Challenge, Sep. 2017.

M. P. A. Starmans[†], *Radiomics and liver tumors*, Presented at the Current and Future Perspectives in Primary Liver Tumors Symposium 2017, Aug. 2017.

Publications

Journal Papers

E. J. Bijl*, **M. P. A. Starmans***, J. M. Mostert, S. Klein, F. J. P. M. Huygen, and C. C. de Vos, “Automatic quantification of complex regional pain syndrome using radiomics and deep learning based on thermography images,” *In Preparation*.

M. K. Bos, J. Kraan, **M. P. A. Starmans**, J. Helmijr, A. Joosse, A. A. M. van der Veldt, P. A. W. te Boekhorst, J. W. M. Martens, S. M. Wilting, and S. Sleijfer, “Comprehensive characterization of circulating tumor cells and cell-free dna in patients with metastatic melanoma,” *Submitted*.

B.-J. Boverhof, K. Redekop, D. Bos, **M. P. A. Starmans**, J. Birch, A. Rockall, and J. J. Visser, “Radiology ai deployment and assessment rubric (radar) for value-based ai in radiology,” *Under Preparation*.

N. Herrera, M. Camacho, E. Ruiz, R. Gatta, K. Lekadir, and **M. P. A. Starmans**, “Bias and fairness in radiomics: A comparative analysis of machine learning models on four oncology datasets,” *Under Preparation*.

D. J. Höppener, W. Aswolinskiy, D. Tellez, Z. Qian, P. M. Nierop, **M. P. A. Starmans**, I. D. Nagtegaal, M. Doukas, J. H. de Wilt, D. J. Grünhagen, J. A. van der Laak, P. Vermeulen, F. Ciompi, and C. Verhoef, “Predicting survival after surgery for colorectal liver metastasis with deep learning,” *Submitted*.

K. Lekadir, ..., and **M. P. A. Starmans**, “FUTURE-AI: International consensus guideline for trustworthy and deployable artificial intelligence in healthcare,” *Submitted*.

D. J. Spaanderman*, S. N. Hakkesteegt*, A.-R. W. Schut, C. Messiou, R. Jones, A. Hayes, L. Nardo, Y. Gaber, W. J. Niessen, G. J. L. H. van Leenders, J. J. Visser, S. Klein, D. J. Grünhagen, C. Verhoef, and **M. P. A. Starmans**, "Multi-center external validation of a radiomics model differentiating between alt and lipoma using automatic and minimally interactive segmentation methods," *Under Preparation*.

D. J. Spaanderman, **M. P. A. Starmans**, G. C. M. van Erp, D. F. Hanff, J. Sluiter, A.-R. W. Schut, G. J. L. H. van Leenders, C. Verhoef, W. J. Niessen, J. J. Visser, D. J. Grünhagen, and S. Klein, "Interactive segmentation of soft-tissue tumors on MRI and CT," *Under Revision*.

H. Kondylakis, V. Kalokyri, S. Sfakianakis, K. Marias, M. Tsiknakis, A. Jimenez-Pastor, E. Camacho-Ramos, I. Blanquer, J. D. Segrelles, S. López-Huguet, C. Barelle, M. Kogut-Czarkowska, G. Tsakou, N. Siopsis, Z. Sakellariou, P. Bizopoulos, V. Drossou, A. Lalas, K. Votis, P. Mallol, L. Martí-Bonmatí, L. C. Alberich, K. Seymour, S. Boucher, E. Ciarrocchi, L. Fromont, J. Rambla, A. Harms, A. Gutierrez, **M. P. A. Starmans**, F. Prior, J. L. Gelpí, and K. Lekadir, "Data infrastructures for ai in medical imaging: A report on the experiences of five eu projects," *European Radiology Experimental*, vol. 7, no. 1, p. 20, May 2023. doi: 10.1186/s41747-023-00336-x.

M. P. A. Starmans, R. L. Miclea, V. Vilgrain, M. Ronot, Y. Purcell, J. Verbeek, W. J. Niessen, J. N. Ijzermans, R. A. de Man, M. Doukas, S. Klein*, and M. G. Thomeer*, "Automated assessment of t2-weighted mri to differentiate malignant and benign primary solid liver lesions in noncirrhotic livers usiong radiomics," *Academic Radiology*, Sep. 2023. doi: 10.1016/j.acra.2023.07.024.

D. Van der Reijd, C. Guerendel, F. Staal, M. Busard, M. De Oliveira Taveira, E. Klompenhouwer, K. Kuhlmann, A. Moelker, C. Verhoef, **M. P. A. Starmans**, D. Lambregts, R. Beets-Tan, S. Benson, and M. Maas, "Independent validation of CT radiomics models in colorectal liver metastases: Predicting local tumour progression after ablation," *Eruopean Radiology*, 2023. doi: Accepted.

M. P. A. Starmans*, L. S. Ho*, F. Smits, N. Beije, I. de Kruijff, J. J. de Jong, D. M. Somford, E. R. Boevé, E. te Slaa, E. C. C. Cauberg, S. Klaver, A. G. van der Heijden, C. J. Wijburg, A. C. M. van de Luijtgaarden, H. H. E. van Melick, E. Cauffman, P. de Vries, R. Jacobs, W. J. Niessen, J. J. Visser, S. Klein, J. L. Boormans, and A. A. M. van der Veldt, "Optimization of preoperative lymph node staging in patients with muscle-invasive bladder cancer using radiomics on computed tomography," *Journal of Personalized Medicine*, vol. 12, no. 5, Apr. 2022. doi: 10.3390/jpm12050726.

M. P. A. Starmans*, M. J. M. Timbergen*, M. Vos, M. Renckens, D. J. Grünhagen, G. J. L. H. van Leenders, R. S. Dwarkasing, F. E. J. A. Willemssen, W. J. Niessen, C. Verhoef, S. Sleijfer, J. J. Visser, and S. Klein, "Differential diagnosis and molecular stratification of gastrointestinal stromal tumors on CT images using a radiomics approach," *Journal of Digital Imaging*, vol. 15, pp. 127–136, Jan. 2022. doi: 10.1007/s10278-022-00590-2.

L. Angus*, **M. P. A. Starmans***, A. Rajicic, A. E. Odink, M. Jalving, W. J. Niessen, J. J. Visser, S. Sleijfer, S. Klein, and A. A. M. van der Veldt, "The BRAF P.V600E mutation status of melanoma lung metastases cannot be discriminated on computed tomography by LIDC criteria nor radiomics using machine learning," *Journal of Personalized Medicine*, vol. 11, no. 4, p. 257, 4 Apr. 2021. doi: 10.3390/jpm11040257.

A. Blazevic*, **M. P. A. Starmans***, T. Brabander, R. S. Dwarkasing, R. A. H. van Gils, J. Hofland, G. J. H. Franssen, R. A. Feelders, W. J. Niessen, S. Klein, and W. W. de Herder, "Predicting symptomatic mesenteric mass in small intestinal neuroendocrine tumors using radiomics," *Endocrine-Related Cancer*, vol. 28, no. 8, pp. 529–539, 8 Aug. 2021. doi: 10.1530/erc-21-0064.

J. M. Castillo T*, M. Arif*, **M. P. A. Starmans**, W. J. Niessen, C. H. Bangma, I. Schoots, and J. F. Veenland, "Classification of clinically significant prostate cancer on multi-parametric mri: A validation study comparing deep learning and radiomics," *Cancers*, vol. 14, no. 1, Dec. 2021. doi: 10.3390/cancers14010012.

J. M. Castillo T, **M. P. A. Starmans**, M. Arif, W. J. Niessen, S. Klein, C. H. Bangma, I. G. Schoots, and J. F. Veenland, "A multi-center, multi-vendor study to evaluate the generalizability of a radiomics model for classifying prostate cancer: High grade vs. low grade," *Diagnostics*, vol. 11, no. 2, p. 369, 2 Feb. 2021. doi: 10.3390/diagnostics11020369.

M. P. A. Starmans, M. J. M. Timbergren, M. Vos, G. A. Padmos, D. J. Grünhagen, C. Verhoef, S. Sleijfer, G. J. L. H. van Leenders, F. E. Buisman, F. E. J. A. Willemssen, B. G. Koerkamp, L. Angus, A. A. M. van der Veldt, A. Rajacic, A. E. Odink, M. Renckens, M. Doukas, R. A. de Man, J. N. M. Ijzermans, R. L. Miclea, P. B. Vermeulen, M. G. Thomeer, J. J. Visser, W. J. Niessen, and S. Klein, "The WORC* database: MRI and CT scans, segmentations, and clinical labels for 930 patients from six radiomics studies," *Submitted*, 2021. medRxiv: 2021.08.19.21262238.

M. P. A. Starmans, S. R. van der Voort, T. Phil, M. J. M. Timbergren, M. Vos, G. A. Padmos, W. Kessels, D. Hanff, D. J. Grünhagen, C. Verhoef, S. Sleijfer, M. J. van den Bent, M. Smits, R. S. Dwarkasing, C. J. Els, F. Fiduzi, G. J. L. H. van Leenders, A. Blazevic, J. Hofland, T. Brabander, R. van Gils, G. J. H. Franssen, R. A. Feelders, W. W. de Herder, F. E. Buisman, F. E. J. A. Willemssen, B. Groot Koerkamp, L. Angus, A. A. M. van der Veldt, A. Rajacic, A. E. Odink, M. Deen, J. M. Castillo T, J. F. Veenland, I. Schoots, M. Renckens, M. Doukas, R. A. de Man, J. N. M. Ijzermans, R. L. Miclea, P. B. Vermeulen, E. E. Bron, M. G. Thomeer, J. J. Visser, W. J. Niessen, and S. Klein, "Reproducible radiomics through automated machine learning validated on twelve clinical applications," *Submitted*, 2021. arXiv: 2108.08618.

M. P. A. Starmans*, F. E. Buisman*, M. Renckens, F. E. J. A. Willemssen, S. R. van der Voort, B. Groot Koerkamp, D. J. Grünhagen, W. J. Niessen, P. B. Vermeulen, C. Verhoef, J. J. Visser, and S. Klein, "Distinguishing pure histopathological growth patterns of colorectal liver metastases on CT using deep learning and radiomics: A pilot study," *Clinical & Experimental Metastasis*, 2021. doi: 10.1007/s10585-021-10119-6.

P. Kalendralis, Z. Shi, A. Traverso, A. Choudhury, M. Sloep, I. Zhovannik, **M. P. A. Starmans**, D. Grittner, P. Feltens, R. Monshouwer, S. Klein, R. Fijten, H. Aerts, A. Dekker, J. Soest, and L. Wee, "FAIR-compliant clinical, radiomics and DICOM metadata of RIDER, interobserver, Lung1 and head-Neck1 TCIA collections," *Medical Physics*, vol. 47, no. 11, pp. 5931–5940, 11 Nov. 2020. doi: 10.1002/mp.14322.

M. J. M. Timbergren*, **M. P. A. Starmans***, G. A. Padmos, D. J. Grünhagen, G. J. L. H. van Leenders, D. F. Hanff, C. Verhoef, W. J. Niessen, S. Sleijfer, S. Klein, and J. J. Visser, "Differential diagnosis and mutation stratification of desmoid-type fibromatosis on MRI using radiomics," *European Journal of Radiology*, vol. 131, p. 109266, Oct. 2020. doi: 10.1016/j.ejrad.2020.109266.

P. Kalendralis, A. Traverso, Z. Shi, I. Zhovannik, R. Monshouwer, **M. P. A. Starmans**, S. Klein, E. Pfaehler, R. Boellaard, A. Dekker, and L. Wee, “Multicenter CT phantoms public dataset for radiomics reproducibility tests,” *Medical Physics*, vol. 46, no. 3, pp. 1512–1518, 3 Mar. 2019. doi: 10.1002/mp.13385.

S. R. van der Voort, F. Incekara, M. M. J. Wijnenga, G. Kapas, M. Gardeniers, J. W. Schouten, **M. P. A. Starmans**, R. N. Tewarie, G. J. Lycklama, P. J. French, H. J. Dubbink, M. J. van den Bent, A. J. P. E. Vincent, W. J. Niessen, S. Klein, and M. Smits, “Predicting the 1p/19q codeletion status of presumed low-grade glioma with an externally validated machine learning algorithm,” *Clinical Cancer Research*, vol. 25, no. 24, pp. 7455–7462, 24 Dec. 2019. doi: 10.1158/1078-0432.ccr-19-1127.

M. Vos^{*}, **M. P. A. Starmans**^{*}, M. J. M. Timbergren, S. R. van der Voort, G. A. Padmos, W. Kessels, W. J. Niessen, G. J. L. H. van Leenders, D. J. Grünhagen, S. Sleijfer, C. Verhoef, S. Klein, and J. J. Visser, “Radiomics approach to distinguish between well differentiated liposarcomas and lipomas on MRI,” *British Journal of Surgery*, vol. 106, no. 13, pp. 1800–1809, Dec. 2019. doi: 10.1002/bjs.11410.

Book Chapters

M. P. A. Starmans^{*}, S. R. van der Voort^{*}, J. M. Castillo T, J. F. Veenland, S. Klein, and W. J. Niessen, “Radiomics: Data mining using quantitative medical image features,” in *Handbook of Medical Image Computing and Computer Assisted Intervention*, S. K. Zhou, D. Rueckert, and G. Fichtinger, Eds. Academic Press, 2020, ch. 18, pp. 429–456. doi: 10.1016/B978-0-12-816176-0.00023-5.

Conference Papers

V. Dang[†], A. Casamitjana, **M. Starmans**, C. Martín-Isla, J. Hernández-González, K. Lekadir, and Alzheimer’s Disease Neuroimaging Initiative, “Auditing unfair biases in cnn-based diagnosis of alzheimer’s disease,” in *Fairness of AI in Medical Imaging (FAIMI) MICCAI 2023 Workshop*, Oct. 2023.

K. B. de Raad[†], K. A. van Garderen, M. Smits, S. R. van der Voort, F. Incekara, E. H. G. Oei, J. Hirvasniemi, S. Klein, and **M. P. A. Starmans**, “The effect of preprocessing on convolutional neural networks for medical image segmentation,” in *International Symposium on Biomedical Imaging (ISBI 2021)*, Apr. 2021. doi: 10.1109/ISBI48211.2021.9433952.

J. M. Castillo T[†], **M. P. A. Starmans**, W. J. Niessen, I. Schoots, S. Klein, and J. F. Veenland, “Classification of prostate cancer: High grade versus low grade using a radiomics approach,” in *2019 IEEE 16th International Symposium on Biomedical Imaging (ISBI 2019)*, Institute of Electrical and Electronics Engineers (IEEE), Apr. 2019, pp. 1319–1322. doi: 10.1109/isbi.2019.8759217.

M. P. A. Starmans[†], R. L. Miclea, S. R. van der Voort, W. J. Niessen, M. G. Thomeer, and S. Klein, “Classification of malignant and benign liver tumors using a radiomics approach,” in *Medical Imaging 2018: Image Processing*, E. D. Angelini and B. A. Landman, Eds., vol. 10574, SPIE-Intl Soc Optical Eng, Mar. 2018, pp. 343–349. doi: 10.1117/12.2293609.

Conference Abstracts

S. Derk[†], L. Ho, S. Koene, **M. Starmans**, A. Joosse, M. de Jonge, J. Jongen, M. van den Bent, M. Smits, and A. van der Veldt, “Does size matter? response of melanoma brain

metastases to immune checkpoint inhibitors,” in *BRAIN METASTASES RESEARCH AND EMERGING THERAPY CONFERENCE, Paris, France*, 2023.

S. N. Hakkesteegt[†], D. J. Spaanderman, A.-R. W. Schut, C. Messiou, R. Jones, A. Hayes, L. Nardo, Y. Gaber, W. J. Niessen, G. J. L. H. van Leenders, J. J. Visser, S. Klein, D. J. Grünhagen, C. Verhoef, and **M. P. A. Starmans**, “Multi-center external validation of a radiomics model differentiating between alt and lipoma using automatic and minimally interactive segmentation methods,” in *Connective Tissue Oncology Society (CTOS) Annual Meeting, Dublin, Ireland*, 2023.

D. J. Höppener, W. Aswolinskiy, D. Tellez, Z. Qian, P. M. Nierop, **M. P. A. Starmans**, I. D. Nagtegaal, M. Doukas, J. H. de Wilt, D. J. Grünhagen, J. A. van der Laak, P. Vermeulen, F. Ciompi, and C. Verhoef, “Predicting survival after surgery for colorectal liver metastasis with deep learning,” in *Liver Metastases Research Network (LMRN) annual meeting 2023*, 2023.

D. J. Spaanderman[†], **M. P. A. Starmans**, G. C. M. van Erp, D. F. Hanff, J. Sluiter, A.-R. W. Schut, G. J. L. H. van Leenders, C. Verhoef, W. J. Niessen, J. J. Visser, D. J. Grünhagen, and S. Klein, “Interactive segmentation of soft-tissue tumors on MRI and CT,” in *Connective Tissue Oncology Society (CTOS) Annual Meeting, Dublin, Ireland*, 2023.

—, “Interactive segmentation of soft-tissue tumors on MRI and CT,” in *Dutch Society for Pattern Recognition (NVPHBV) Spring Meeting*, 2023.

—, “Interactive segmentation of soft-tissue tumors on MRI and CT,” in *Dutch Sarcoma and GIST Group Symposium*, 2023.

—, “Interactive segmentation of soft-tissue tumors on MRI and CT,” in *European Congress of Radiology (ECR)*, 2023.

S. van Gurp, K. R. Voigt, S. Klein, F. M. Vos, D. J. Grünhagen, C. Verhoef, and **M. P. A. Starmans**, “Predicting of histopathological growth patterns of colorectal liver metastases on ct scans: Using deep learning and radiomics,” in *Liver Metastases Research Network (LMRN) annual meeting 2023*, 2023.

D. J. Spaanderman[†], S. Klein, A.-R. W. Schut, G. J. L. H. van Leenders, C. Verhoef, J. J. Visser, W. J. Niessen, D. J. Grünhagen, and **M. P. A. Starmans**, “Automatic segmentation of soft-tissue tumors on MRI and CT,” in *Dutch Sarcoma and GIST Group Symposium*, Best abstract award, 2022.

—, “Automatic segmentation using deep learning to distinguish between 9 types of soft-tissue tumors with radiomics,” in *Connective Tissue Oncology Society (CTOS) Annual Meeting, Vancouver, Canada*, 2022.

A. Blazevic[†], **M. P. A. Starmans**, T. Brabander, J. Hofland, G. J. H. Franssen, R. A. Feeders, W. J. Niessen, S. Klein, and W. W. de Herder, “Prediction of symptomatic mesenteric mass in patients with small intestinal neuroendocrine tumors using a CT radiomics approach,” in *Neuroendocrinology, Abstracts of the 17th Annual ENETS Conference for the Diagnosis and Treatment of Neuroendocrine Tumor Disease*, vol. 110, 2020, pp. 1–312.

M. P. A. Starmans[†], C. J. Els, F. Fiduzi, W. J. Niessen, S. Klein, and R. S. Dwarkasing, “Radiomics model to predict hepatocellular carcinoma on liver MRI of high-risk patients

in surveillance: A proof-of-concept study," in *Insights into Imaging*, European Congress of Radiology (ECR) 2020 Book of Abstracts, Presented at the European Congress of Radiology (ECR) 2020, vol. 11, May 2020, p. 419. doi: 10.1186/s13244-020-00851-0.

M. P. A. Starmans[†], M. J. M. Timbergren, G. A. Padmos, D. J. Grünhagen, G. J. L. H. van Leenders, D. F. Hanff, S. Sleijfer, J. J. Visser, and S. Klein, "Distinguishing desmoid-type fibromatosis from soft tissue sarcoma on MRI using a radiomics approach," in *Insights into Imaging*, European Congress of Radiology (ECR) 2020 Book of Abstracts, Presented at the European Congress of Radiology (ECR) 2020, vol. 11, May 2020, p. 236. doi: 10.1186/s13244-020-00851-0.

M. P. A. Starmans[†], M. J. M. Timbergren, M. Vos, M. Renckens, D. J. Grünhagen, G. J. L. H. van Leenders, S. Sleijfer, J. J. Visser, and S. Klein, "Differential diagnosis and mutation stratification of gastrointestinal stromal tumours on CT images using a radiomics approach," in *Insights into Imaging*, European Congress of Radiology (ECR) 2020 Book of Abstracts, Presented at the European Congress of Radiology (ECR) 2020, vol. 11, May 2020, p. 308. doi: 10.1186/s13244-020-00851-0.

M. P. A. Starmans[†], F. E. Buisman, F. Willemssen, S. R. van der Voort, D. J. Grünhagen, P. B. Vermeulen, C. Verhoef, S. Klein, and J. J. Visser, "Prediction of histopathological growth patterns by radiomics and CT-imaging in patients with operable colorectal liver metastases: A proof-of-concept study," in *Insights into Imaging*, European Congress of Radiology (ECR) 2020 Book of Abstracts, Presented at the European Congress of Radiology (ECR) 2020, vol. 11, May 2020, p. 419. doi: 10.1186/s13244-020-00851-0.

M. P. A. Starmans[†], M. Vos, M. J. M. Timbergren, S. R. van der Voort, D. J. Grünhagen, S. Sleijfer, C. Verhoef, J. J. Visser, and S. Klein, "Distinguishing well-differentiated liposarcomas from lipomas on MR images using a radiomics approach," in *Insights into Imaging*, European Congress of Radiology (ECR) 2020 Book of Abstracts, Presented at the European Congress of Radiology (ECR) 2020, vol. 11, May 2020, p. 235. doi: 10.1186/s13244-020-00851-0.

M. P. A. Starmans, S. R. van der Voort, H. C. Achterberg[†], T. Phil, M. J. M. Timbergren, M. Vos, G. A. Padmos, W. Kessels, D. Hanff, D. J. Grünhagen, C. Verhoef, S. Sleijfer, M. J. van den Bent, M. Smits, R. S. Dwarkasing, C. J. Els, F. Fiduzi, G. J. L. H. van Leenders, A. Blazevic, J. Hofland, T. Brabander, R. van Gils, G. J. H. Franssen, R. A. Feelders, W. W. de Herder, F. E. Buisman, F. E. J. A. Willemssen, B. Groot Koerkamp, L. Angus, A. A. M. van der Veldt, A. Rajacic, A. E. Odink, M. Deen, J. M. Castillo T, J. F. Veenland, I. Schoots, M. Renckens, M. Doukas, R. A. de Man, J. N. M. Ijzermans, R. L. Miclea, P. B. Vermeulen, E. E. Bron, M. G. Thomeer, J. J. Visser, W. J. Niessen, and S. Klein, "Fully automatic construction of optimal radiomics workflows," in *Health-RI Conference*, 2020.

M. J. M. Timbergren[†], **M. P. A. Starmans**, M. Vos, M. Renckens, D. J. Grünhagen, G. J. L. H. van Leenders, W. J. Niessen, C. Verhoef, S. Sleijfer, S. Klein, and J. J. Visser, "Radiomics of gastrointestinal stromal tumors; risk classification based on computed tomography images – a pilot study," 2, vol. 46, Elsevier BV, Feb. 2020, p. e6. doi: 10.1016/j.ejso.2019.11.011.

P. Kalendralis[†], A. Traverso, Z. Shi, I. Zhovannik, R. Monshouwer, **M. P. A. Starmans**, S. Klein, P. Elisabeth, R. Boellaard, A. Dekker, and L. Wee, "Multicenter CT phantoms public dataset for radiomics reproducibility studies," vol. 133, Elsevier BV, Apr. 2019, p. S1030. doi: 10.1016/s0167-8140(19)32315-1.

M. P. A. Starmans[†], S. van der Voort, R. L. Miclea, M. Vos, F. Incekara, M. J. M. Timbergen, M. M. J. Wijnenga, G. A. Padmos, W. Kessels, G. J. L. H. van Leenders, G. Kapsas, M. J. Van den Bent, A. J. P. E. Vincent, D. J. Grünhagen, C. Verhoef, S. Sleijfer, J. J. Visser, M. Smits, M. G. Thomeer, W. J. Niessen, and S. Klein, “Fully automatic construction of optimal radiomics workflows,” in *7th Dutch Bio-Medical Engineering (BME) Conference*, Presented at the BME Conference 2019, 2019.

M. P. A. Starmans[†], A. Blazevic, T. Brabander, J. Hofland, W. J. Niessen, W. W. de Herder, and S. Klein, “Prediction of surgery requirement in mesenteric fibrosis on CT using a radiomics approach,” in *Insights into Imaging*, European Congress of Radiology (ECR) 2019: Book of Abstracts, Presented at the European Congress of Radiology (ECR) 2019, vol. 10, Feb. 2019, p. S457. doi: 10.1186/s13244-019-0713-y.

M. P. A. Starmans[†], R. Miclea, S. R. van der Voort, W. J. Niessen, S. Klein, and M. G. Thomeer, “Classification of malignant and benign liver tumours using a radiomics approach,” in *Insights into Imaging*, European Congress of Radiology (ECR) 2019: Book of Abstracts, Presented at the European Congress of Radiology (ECR) 2019, vol. 10, Feb. 2019, p. S200. doi: 10.1186/s13244-019-0713-y.

M. P. A. Starmans[†], S. R. van der Voort, M. Vos, F. Incekara, J. J. Visser, M. Smits, M. G. Thomeer, W. J. Niessen, and S. Klein, “Fully automatic construction of optimal radiomics workflows,” in *Insights into Imaging*, European Congress of Radiology (ECR) 2019: Book of Abstracts, Presented at the European Congress of Radiology (ECR) 2019, vol. 10, Feb. 2019, p. S379. doi: 10.1186/s13244-019-0713-y.

T. Theodoridis[†], **M. P. A. Starmans**, S. Klein, and E. E. Bron, “Radiomics features for use in dementia diagnosis,” in *36th Annual Scientific Meeting of the ESMRMB*, 2019.

M. J. M. Timbergen[†], **M. P. A. Starmans**, M. Vos, G. A. Padmos, D. J. Grünhagen, G. J. L. H. van Leenders, C. Verhoef, W. J. Niessen, S. Sleijfer, S. Klein, and J. J. Visser, “Mutation stratification of desmoid-type fibromatosis using a radiogenomics approach,” 2, vol. 45, Elsevier BV, Feb. 2019, p. e16. doi: 10.1016/j.ejso.2018.10.084.

M. J. M. Timbergen[†], **M. P. A. Starmans**, M. Vos, M. Renckens, D. J. Grünhagen, G. J. L. H. van Leenders, W. J. Niessen, C. Verhoef, S. Sleijfer, S. Klein, and J. J. Visser, “Radiomics of gastrointestinal stromal tumours, risk classification based on computed tomography images: A pilot study,” Supplement 5, vol. 30, Elsevier BV, Oct. 2019, pp. v699–v700. doi: 10.1093/annonc/mdz283.040.

A. Traverso[†], I. Zhovannik, Z. Shi, P. Kalendralis, R. Monshouwer, **M. P. A. Starmans**, S. Klein, E. Pfaehler, R. Boellaard, A. Dekker, and L. Wee, “Are quality assurance phantoms useful to assess radiomics reproducibility? a multi-center study,” vol. 133, Elsevier BV, Apr. 2019, pp. S515–S516. doi: 10.1016/s0167-8140(19)31373-8.

M. Vos[†], **M. P. A. Starmans**, M. J. M. Timbergen, S. R. van der Voort, G. A. Padmos, W. Kessels, W. J. Niessen, G. J. L. H. van Leenders, D. J. Grünhagen, S. Sleijfer, C. Verhoef, S. Klein, and J. J. Visser, “Differentiating well-differentiated liposarcomas from lipomas using a radiomics approach,” in *Annals of Oncology*, Abstract Book of the 44th ESMO Congress (ESMO 2019), vol. 30, Elsevier BV, Oct. 2019, p. v700. doi: 10.1093/annonc/mdz283.041.

M. P. A. Starmans[†], S. R. van der Voort, R. L. Miclea, M. Vos, F. Incekara, M. J. M. Timbergen, M. M. J. Wijnenga, G. A. Padmos, G. J. L. H. van Leenders, G. Kapsas, M. J. van den Bent, A. J. P. E. Vincent, D. J. Grünhagen, C. Verhoef, S. Sleijfer, J. J. Visser, M.

Smits, M. G. Thomeer, W. J. Niessen, and S. Klein, "Harmonizing radiomics among applications through adaptive workflow optimization," in *European Society of Medical Imaging Informatics (EuSoMII) Annual Meeting*, Presented at the EuSoMII Annual Meeting 2018, 2018.

M. P. A. Starmans[†], F. Buisman, S. R. van der Voort, M. Renckens, B. Galjart, P. Nierop, W. J. Niessen, C. Verhoef, J.-J. Visser, and S. Klein, "Prediction of histopathological growth patterns in colorectal liver metastases using a radiomics approach," in *Dutch Society for Pattern Recognition (NVPHBV) Spring Meeting*, Presented at the NVPHBV Spring Meeting 2017, 2017.

Software

M. P. A. Starmans, *CLMRadiomics*, <https://github.com/MStarmans91/CLMRadiomics>, Zenodo, 2021. doi: 10.5281/zenodo.4392829.

—, *LiverRadiomics*, <https://github.com/MStarmans91/LiverRadiomics>, Zenodo, 2021. doi: 10.5281/zenodo.5175705.

—, *MelaRadiomics*, <https://github.com/MStarmans91/MelaRadiomics>, 2021. doi: 10.5281/zenodo.4644067.

—, *MesentericRadiomics*, <https://github.com/MStarmans91/MesentericRadiomics>, Zenodo, 2021. doi: 10.5281/zenodo.4916317.

—, *WORCDatabase*, <https://github.com/MStarmans91/WORCDatabase>, Zenodo, 2021. doi: 10.5281/zenodo.5119040.

—, *DMRadiomics*, <https://github.com/MStarmans91/DMRadiomics>, Zenodo, 2020. doi: 10.5281/zenodo.4017190.

—, *GISTRadiomics*, <https://github.com/MStarmans91/GISTRadiomics>, Zenodo, 2020. doi: 10.5281/zenodo.3839322.

—, *LipoRadiomicsFeatures*, <https://github.com/MStarmans91/LipoRadiomicsFeatures>, Zenodo, 2019. doi: 10.5281/zenodo.3950040.

M. P. A. Starmans, S. R. Van der Voort, T. Phil, and S. Klein, *Workflow for optimal radiomics classification (WORC)*, <https://github.com/MStarmans91/WORC>, Zenodo, 2018. doi: 10.5281/zenodo.3840534.

S. R. van der Voort^{*} and **M. P. A. Starmans^{*}**, *Predict: A radiomics extensive digital interchangeable classification toolkit (PREDICT)*, <https://github.com/Svdvoort/PREDICTFastr>, Zenodo, 2018. doi: 10.5281/zenodo.3854839.

* indicates equal contributions

† indicates presenting author