Selected Publications

As of March 2024, my **h-index is ca. 150**. The following list contains **only my most important publications**. For a **full list** of my publications, see Google Scholar: https://scholar.google.com/citations?user=ZgO3g3QAAAAJ.

1. M. Amirian, D. Barco, I. Herzig, and F.-P. Schilling, "Artifact Reduction in 3D and 4D Cone-beam Computed Tomography Images with Deep Learning - A Review," *IEEE Access*, vol. 12, pp. 10 281–10 295, 2024. doi: 10.1109/ACCESS.2024.3353195

2. P. Denzel, S. Brunner, P.-P. Luley, C. Frischknecht-Gruber, M. U. Reif, F.-P. Schilling, A. Amini, M. Repetto, A. Iranfar, J. Weng, and R. Chavarriaga, "A framework for assessing and certifying explainability of health-oriented AI systems," in *Explainable AI in Medicine Workshop, Lugano, Switzerland, November 2023*, 2023. [Online]. Available: `https://digitalcollection.zhaw.ch/handle/11475/29258`

3. P. Denzel, F.-P. Schilling, and E. Gavagnin, "Map-to-map translation for SKA mock observations and cosmological simulations," in *Hammers and Nails 2023 - Swiss Edition, Ascona, Switzerland, October 2023*, 2023. doi: 10.21256/zhaw-29047

4. M. Amirian, J. A. Montoya-Zegarra, I. Herzig, P. E. Hotz, L. Lichtensteiger, M. Morf, A. Züst, P. Paysan, I. Peterlik, S. Scheib, R. M. Füchslin, T. Stadelmann, and F.-P. Schilling, "Mitigation of motion-induced artefacts in Cone Beam Computed Tomography using Deep Convolutional Neural Networks," *Med. Phys.*, vol. 50, no. 10, pp. 6228–6242, 2023. doi: 10.1002/mp.16405

5. F.-P. Schilling, D. Flumini, R. M. Füchslin, E. Gavagnin, A. Geller, S. Quarteroni, and T. Stadelmann, "Foundations of Data Science: A Comprehensive Overview Formed at the 1st International Symposium on the Science of Data Science," *Archives of Data Science, Series A*, vol. 8, no. 2, pp. 1 – 20, 2022. doi: 10.5445/IR/1000146422

6. I. Herzig, P. Paysan, S. Scheib, F.-P. Schilling, J. Montoya, M. Amirian, T. Stadelmann, P. Eggenberger, R. M. Füchslin, and L. Lichtensteiger, "Deep Learning-Based Simultaneous Multi-Phase Deformable Image Registration of Sparse 4D-CBCT," in *Proceedings of the American Association of Physics in Medicine Annual Meeting (AAPM 2022)*, 2022. doi: 10.21256/zhaw-25181 Washington, DC, USA, July 2022

7. N. Simmler, P. Sager, P. Andermatt, R. Chavarriaga, F.-P. Schilling, M. Rosenthal, and T. Stadelmann, "A survey of un-, weakly-, and semi-supervised learning methods for noisy, missing and partial labels in industrial vision applications," in *8th Swiss Conference on Data Science (SDS)*, 2021. doi: 10.1109/SDS51136.2021.00012 pp. 26–31

8. L. Tuggener, M. Amirian, F. Benites, P. von Däniken, P. Gupta, F.-P. Schilling, and T. Stadelmann, "Design Patterns for Resource-Constrained Automated Deep-Learning Methods," *AI*, vol. 1, no. 4, pp. 510–538, 2020. doi: 10.3390/ai1040031

9. F.-P. Schilling and T. Stadelmann, Eds., *Artificial neural networks in pattern recognition : Proceedings of the 9th IAPR TC3 workshop, ANNPR 2020, Winterthur, Switzerland, September 2-4, 2020*, vol. Lecture Notes in Computer Science, no. 12294. Springer, 2020. doi: 10.1007/978-3-030-58309-5

10. M. Amirian, L. Tuggener, R. Chavarriaga, Y. P. Satyawan, F.-P. Schilling, F. Schwenker, and T. Stadelmann, "Two to trust: Automl for safe modelling and interpretable deep learning for robustness," *Proc. of the 1st TAILOR Workshop on Trustworthy AI at ECAI 2020*, 2020. doi: 10.21256/zhaw-22061

11. M. Amirian, K. Rombach, L. Tuggener, F.-P. Schilling, and T. Stadelmann, "Efficient deep cnns for cross-modal automated computer vision under time and space constraints," *Proc. of ECML-PKDD 2019, Würzburg*, 2019. doi: 10.21256/zhaw-18357

12. S. Chatrchyan *et al.*, "Measurement of the mass difference between top quark and antiquark in pp collisions at $\sqrt{s} = 8$ TeV," *Phys. Lett. B*, vol. 770, pp. 50–71, 2017. doi: 10.1016/j.physletb.2017.04.028

13. S. Chatrchyan *et al.*, "Evidence for the direct decay of the 125 GeV Higgs boson to fermions," *Nature Phys.*, vol. 10, p. 557, 2014. doi: 10.1038/nphys3005

14. S. Chatrchyan *et al.*, "Search for the standard model Higgs boson produced in association with a W or a Z boson and decaying to bottom quarks," *Phys. Rev.*, vol. D89, p. 012003, 2014. doi: 10.1103/PhysRevD.89.012003

15. S. Chatrchyan *et al.*, "Observation of a new boson with mass near 125 GeV in pp collisions at $\sqrt{s} = 7$ and 8 TeV," *JHEP*, vol. 1306, p. 081, 2013. doi: 10.1007/JHEP06(2013)081

16. S. Chatrchyan *et al.*, "Observation of a new boson at a mass of 125 GeV with the CMS experiment at the LHC," *Phys.Lett.*, vol. B716, pp. 30–61, 2012. doi: 10.1016/j.physletb.2012.08.021

17. F.-P. Schilling, "Top Quark Physics at the LHC: A Review of the First Two Years," *Int. J. Mod. Phys.*, vol. A27, no. 17, p. 1230016, 2012. doi: 10.1142/s0217751x12300165

18. S. Chatrchyan *et al.*, "Measurement of the single-top-quark t-channel cross section in pp collisions at $\sqrt{s} = 7$ TeV," *JHEP*, vol. 1212, p. 035, 2012. doi: 10.1007/JHEP12(2012)035

19. S. Chatrchyan *et al.*, "Inclusive and differential measurements of the $t\bar{t}$ charge asymmetry in proton-proton collisions at 7 TeV," *Phys.Lett.*, vol. B717, pp. 129–150, 2012. doi: 10.1016/j.physletb.2012.09.028

20. S. Chatrchyan *et al.*, "Measurement of the $t\bar{t}$ Production Cross Section in pp Collisions at 7 TeV in Lepton + Jets Events Using b-quark Jet Identification," *Phys.Rev.*, vol. D84, p. 092004, 2011. doi: 10.1103/PhysRevD.84.092004

21. S. Chatrchyan *et al.*, "Measurement of the t t-bar production cross section and the top quark mass in the dilepton channel in pp collisions at sqrt(s) =7 TeV," *JHEP*, vol. 07, p. 049, 2011. doi: 10.1007/JHEP07(2011)049

22. S. Chatrchyan *et al.*, "Measurement of the Top-antitop Production Cross Section in pp Collisions at sqrt(s)=7 TeV using the Kinematic Properties of Events with Leptons and Jets," *Eur. Phys. J.*, vol. C71, p. 1721, 2011. doi: 10.1140/epjc/s10052-011-1721-3

23. V. Khachatryan *et al.*, "First Measurement of the Cross Section for Top-Quark Pair Production in Proton-Proton Collisions at $\sqrt{s} = 7$ TeV," *Phys.Lett.*, vol. B695, pp. 424–443, 2011. doi: 10.1016/j.physletb.2010.11.058

24. F.-P. Schilling, "Top Quark Studies with the first CMS Data," in *21st Hadron Collider Physics Symposium, Toronto, Canada*, 2010. doi: 10.48550/arXiv.1010.2393 arXiv:1010.2393

25. F.-P. Schilling, "QCD and Top Quark Physics at the LHC," in *4th Intl. Conference on Physics at the LHC, Split, Croatia*, vol. LHC2008, 2008. doi: 10.22323/1.055.0047 p. 047

26. R. Adolphi *et al.*, "The CMS experiment at the CERN LHC," *JINST*, vol. 3, p. S08004, 2008. doi: 10.1088/1748-0221/3/08/S08004

27. G. Bayatian *et al.*, "CMS technical design report, volume II: Physics performance," *J. Phys.*, vol. G34, pp. 995–1579, 2007. doi: 10.1088/0954-3899/34/6/S01

28. A. Aktas *et al.*, "Measurement and QCD analysis of the diffractive deep- inelastic scattering cross-section at HERA," *Eur. Phys. J.*, vol. C48, pp. 715–748, 2006. doi: 10.1140/epjc/s10052-006-0035-3

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30. A. Bruni, M. Diehl, and F.-P. Schilling, "Summary of working group B: Diffraction and vector mesons," in *12th Intl. Workshop on Deep Inelastic Scattering (DIS 2004), Slovakia (DESY-04-201)*, 2004. doi: 10.48550/arXiv.hep-ph/0410106 Preprint arXiv:hep-ph/0410106

31. F.-P. Schilling, "Diffractive final states with the H1 detector at HERA," in *Intl. Europhysics Conference on High-Energy Physics (EPS-HEP 2003), Aachen, Germany*, vol. C33, 2004. doi: 10.1140/epjcd/s2004-03-1680-9 pp. s530–s532

32. F.-P. Schilling, "Inclusive diffraction at HERA," in *31st Intl. Conference on High Energy Physics (ICHEP 2002), Amsterdam, The Netherlands*, vol. 117, 2003. doi: 10.1016/S0920-5632(03)90578-0 pp. 403–407

33. C. Adloff *et al.*, "Diffractive jet production in deep inelastic e^+p collisions at HERA," *Eur. Phys. J.*, vol. C20, pp. 29–49, 2001. doi: 10.1007/s100520100634

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