Publications of Andreas Look

An IEEE-Formatted Overview

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Journal Articles

[1] A. Look, M. Kandemir, B. Rakitsch, and J. Peters, "A deterministic approximation to neural SDEs," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 45, no. 4, pp. 4023–4037, 2022.

[2] A. Look, M. Kandemir, B. Rakitsch, and J. Peters, "Cheap and deterministic inference for deep state-space models of interacting dynamical systems," *Transactions on Machine Learning Research*, 2023.

[3] A. Look, O. Kirschner, and S. Riedelbauch, "Building robust classifiers with generative adversarial networks for detecting cavitation in hydraulic turbines," *ICPRAM*, vol. 2018, pp. 456–462, 2018.

[4] L. Harsch, A. Look, and S. Riedelbauch, "Prediction of stationary flow fields with neural networks," 2019.

[5] L. Harsch, A. Look, and S. Riedelbauch, "Vorhersage von stationären Strömungsfeldern mit neuronalen Netzen," *Wasserwirtschaft*, vol. 109, no. 9, pp. 56–59, 2019.

[6] V. F. Ochkov and A. Look, "A system of equations: Mathematics lessons in classical literature," *Journal of Humanistic Mathematics*, vol. 5, no. 2, pp. 121–132, 2015.

[7] A. Look, O. Kirschner, S. Riedelbauch, and J. Necker, "Detection and level estimation of cavitation in hydraulic turbines with convolutional neural networks," 2018.

[8] A. Look, D. Schröder, O. Kirschner, and S. Riedelbauch, "Einsatz von Beamforming-Algorithmen im Ultraschallbereich zur Lokalisation des Blasenzerfalls."

Conference Papers

[9] A. Distelzweig, E. Kosman, A. Look, F. Janjoš, D. K. Manivannan, and A. Valada, "Motion forecasting via model-based risk minimization," in *Proc. IEEE Int. Conf. Robotics and Automation (ICRA)*, 2025.

[10] A. Distelzweig, A. Look, E. Kosman, F. Janjoš, J. Wagner, and A. Valada, "Stochasticity in motion: An information-theoretic approach to trajectory prediction," in *Proc. IEEE/RSJ Int. Conf. Intelligent Robots and Systems (IROS)*, 2025.

[11] M. Haußmann, S. Gerwinn, A. Look, B. Rakitsch, and M. Kandemir, "Learning partially known stochastic dynamics with empirical PAC Bayes," in *Proc. Int. Conf. Artificial Intelligence and Statistics (AISTATS)*, PMLR, 2021, pp. 478–486.

[12] A. Look and S. Riedelbauch, "Dealing with limited access to data: Comparison of deep learning approaches," in *Proc. Int. Joint Conf. Neural Networks (IJCNN)*, IEEE, 2019, pp. 1–8.

[13] A. Look, S. Riedelbauch, J. Necker, and A. Jung, "Cavitation damage detection through acoustic emissions," in *IOP Conf. Series: Earth and Environmental Science*, IOP Publishing, 2019, vol. 405, no. 1, Art. no. 012004.

[14] A. Look and M. Kandemir, "Differential Bayesian neural nets," in *Bayesian Deep Learning Workshop*, 2019.

[15] A. Look, S. Doneva, M. Kandemir, R. Gemulla, and J. Peters, "Differentiable implicit layers," in *Workshop on Machine Learning for Engineering Modeling, Simulation and Design (NeurIPS)*, 2020.

Preprints

[16] A. Rothenhäusler, M. Mazzola, A. Look, R. Rajan, and J. Bödecker, "Don't double it: Efficient agent prediction in occlusions," *arXiv preprint arXiv:2601.21504*, 2026.

[17] P. Gogoi, F. Janjoš, B. Yang, and A. Look, "Uncertainty matters: Structured probabilistic online mapping for motion prediction in autonomous driving," *arXiv preprint arXiv:2603.20076*, 2026.

[18] A. Keysan, A. Look, E. Kosman, G. Gürsun, J. Wagner, Y. Yao, and B. Rakitsch, "Can you text what is happening? Integrating pre-trained language encoders into trajectory prediction models for autonomous driving," *arXiv preprint arXiv:2309.05282*, 2023.

[19] A. Look, M. Kandemir, B. Rakitsch, and J. Peters, "Sampling-free probabilistic deep state-space models," *arXiv preprint arXiv:2309.08256*, 2023.

Doctoral Thesis

[20] A. Look, "Deterministic approximations for deep state-space models," Ph.D. dissertation, 2023.

Patents

[21] M. Kandemir, S. Gerwinn, A. Look, and B. Rakitsch, "Making time-series predictions of a computer-controlled system," U.S. Patent 11,868,887, Jan. 9, 2024.

[22] A. Look and M. Kandemir, "Method and device for processing sensor data," U.S. Patent Application 17/086,057, May 27, 2021.

[23] A. Look, C. Qiu, and M. Kandemir, “Predicting a state of a computer-controlled entity,” U.S. Patent Application 17/231,757, Nov. 11, 2021.

[24] A. Look and M. Kandemir, “Device and method for training the neural drift network and the neural diffusion network of a neural stochastic differential equation,” U.S. Patent Application 17/646,197, Jul. 7, 2022.

[25] A. Look, B. Rakitsch, and J. Peters, “Computer-implemented method for predicting a behavior of agents in a dynamic system with a multiplicity of interacting agents,” U.S. Patent Application 18/308,629, Nov. 16, 2023.

[26] A. Look and B. Rakitsch, “Model-predictive control of a technical system,” U.S. Patent Application 18/799,209, Mar. 6, 2025.

[27] A. Look, B. Rakitsch, J. Rudolph, J. Z. Kolter, and M. Naumann, “Technique for generating a road map for automated driving,” U.S. Patent Application 19/089,634, Oct. 9, 2025.

[28] A. Distelzweig, A. Look, and E. Kosman, “Method for ascertaining potential trajectories when controlling a robot device,” U.S. Patent Application 19/279,004, Feb. 5, 2026.

[29] A. Distelzweig, A. Look, and E. Kosman, “Method for determining an uncertainty associated with trajectory predictions of a vehicle,” U.S. Patent Application 19/291,841, Mar. 19, 2026.

[30] A. Keysan, B. Rakitsch, A. Look, and E. Kosman, “Computer-implemented method for generating a control command for an autonomous vehicle,” U.S. Patent Application 18/811,848, Mar. 12, 2026.