

Brian B. Moser

Machine Learning and AI
Researcher

* 1 March 1995
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“The best way to predict the future is to implement it.” –
David Heinemeier Hansson

Core Strengths

- **Scientific Background:** 30 scientific publications, including top peer-reviewed conferences (see Publications). I have also been a recurrent reviewer for top conferences and journals like NeurIPS, AAAI, TPAMI, CVPR, ICCV, and ECCV.
- **Supervisory Skills:** I have supervised 10+ Master’s theses, 5+ Bachelor’s theses, and numerous projects and seminars with students from the RPTU Kaiserslautern-Landau.
- **Organizational Skills:** While pursuing my PhD, I also ran my own company, managing a team of 20-30 employees.
- **Technical Skills:** Years of experience in various software development fields, including the broader field of image processing and game development.

Education

- 2021 – 2025 **PhD (rer. nat.) - Going Beyond Interpolation with Deep Learning-Driven Image Super-Resolution**, RPTU Kaiserslautern-Landau, Germany, Summa Cum Laude
- 2018 – 2021 **Master of Science**, TU Kaiserslautern, Germany
- 2014 – 2018 **Bachelor of Science (Major: Computer Science; Minor: Mathematics)**, TU Kaiserslautern, Germany

Job Experience

- Since 2025 **Senior Researcher**, German Research Center for Artificial Intelligence, Germany
- Since 2019 **Executive Director**, Various Moser Companies, Kaiserslautern, Germany
- 2021 – 2025 **PhD Researcher**, German Research Center for Artificial Intelligence, Kaiserslautern, Germany
- 2018-2022 **Part-Time Software Developer**, uii GmbH, Kaiserslautern, Germany
- 2018-2021 **Student Research Assistant**, German Research Center for Artificial Intelligence, Kaiserslautern, Germany
- 2015-2018 **Part-Time Administration**, Moser GmbH, Kaiserslautern, Germany
- 2014 – 2015 **Student Research Assistant**, TU KL: Robotics, Kaiserslautern, Germany

Internships

- 2011 **Internship**, DFKI GmbH, Kaiserslautern, Germany
- 2010 **Internship**, HGE Ingenieur GmbH, Kaiserslautern, Germany

Languages

German	Native	
English	C2	European Language Levels
French	A1	

Selected Publications

- 2025 **Unlocking Dataset Distillation with Diffusion Models**, *Conference on Neural Information Processing Systems (NeurIPS)*, 1st Author
- 2025 **TKG-DM: Training-free Chroma Key Content Generation Diffusion Model**, *IEEE/CVF Computer Vision and Pattern Recognition (CVPR)*, Co-Author
- 2025 **Dynamic Attention-Guided Diffusion for Image Super-Resolution**, *IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, 1st Author
- 2025 **SpotDiffusion: A Fast Approach For Seamless Panorama Generation Over Time**, *IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, Co-Author
- 2025 **PupilSense: A Novel Application for Webcam-Based Pupil Diameter Estimation**, *ACM Symposium on Eye Tracking Research and Applications (ETRA)*, Co-Author, Best Short Paper Award
- 2025 **Zoomed In, Diffused Out: Towards Local Degradation-Aware Multi-Diffusion for Extreme Image Super-Resolution**, *IEEE International Conference on Image Processing (ICIP)*, 1st Author
- 2025 **Distill the Best, Ignore the Rest: Improving Dataset Distillation with Loss-Value-Based Pruning**, *International Joint Conference on Neural Networks (IJCNN)*, 1st Author
- 2024 **Diffusion Models, Image Super-Resolution and Everything: A Survey**, *IEEE Transactions on Neural Networks and Learning Systems (TNNLS)*, 1st Author
- 2024 **Waving Goodbye to Low-Res: A Diffusion-Wavelet Approach for Image Super-Resolution**, *International Joint Conference on Neural Networks (IJCNN)*, 1st Author
- 2024 **ObjBlur: A Curriculum Learning Approach With Progressive Object-Level Blurring for Improved Layout-to-Image Generation**, *ACM Multimedia (ACMMM)*, Co-Author
- 2023 **Hitchhiker's Guide to Super-Resolution: Introduction and Recent Advances**, *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 1st Author
- 2022 **Less is More: Proxy Datasets in NAS approach**, *IEEE/CVF Computer Vision and Pattern Recognition Conference (CVPR)*, 1st Author

Certificates and Awards

- 2023 **Online-Certificate:** Introduction to Quantum Information
Certification Authority: Coursera
Lizenznummer: M5QLWW6MAGX5
- 2020 **Online-Certificate:** Reinforcement Learning with Pytorch
Certification Authority: Udemy
Lizenznummer: UC-60e42d0a-ec99-45f8-a26b-3dd79b76ab3c
- 2020 **Online-Certificate:** Bitcoin and Cryptocurrency Bootcamp
Certification Authority: Udemy
Lizenznummer: UC-6fcbf6a4-e799-45e9-bbf9-d33e42ee0edb
- 2019 **Online-Certificate:** How Google does Machine Learning
Certification Authority: Coursera
Lizenznummer: 3DAZYCQEKJ76
- 2019 **Online-Certificate:** Open Source Software Development Methods
Certification Authority: Coursera
Lizenznummer: ZQT23TLA2P2A
- 2019 **Online-Certificate:** Linux for Developers
Certification Authority: Coursera
Lizenznummer: Y7RUQANRGR6
- 2018 **Online-Certificate:** Deep Learning Specialization
Certification Authority: Coursera
Lizenznummer: ZVBDR82K7GT5
- 2018 **Online-Certificate:** Mathematics for Machine Learning Specialization
Certification Authority: Coursera
Lizenznummer: Q9QVAYFW9Y3B
- 2018 **Online-Certificate:** Practical Deep Learning with PyTorch
Certification Authority: Udemy
Lizenznummer: RKFDG70N
- 2016 **Certificate:** TU KL - Diemersteiner Selbstlerntage
- 2016 **Certificate:** Google - Fundamentals of Digital Marketing
- 2014 **Award:** Verein zur Förderung der Informatik an der TU Kaiserslautern e.V.
"For outstanding achievements in the field of computer science throughout the entire upper secondary school period, particularly in his final exams."
- 2013 **Certificate:** Felix-Klein-Zentrum Für Mathematik e.V. - TheoPrax
- 2013 **Certificate:** Fraunhofer - Mathematische Modellierungswoche

Technical Skills

Languages Python, Java, C#, C++

ML Libs PyTorch, Keras, TensorFlow, OpenCV, SciPy, NumPy, scikit-learn

OSs Linux, Windows

Misc Git, Wandb, GIMP, Matplotlib, \LaTeX

Hobbies & Interests

Interests Computer science, mathematical puzzles, and science in general

Hobbies Programming, game development, movies, video games