

Artur Toshev

✉ artur.toshev@tum.de 🏠 [arturtoshev.github.io](https://github.com/arturtoshev) 🎓 [Google Scholar](#)

EDUCATION

Technical University of Munich, Ph.D. candidate (planned) 04/2021–10/2025
Supervised by Nikolaus Adams
Topic: Data-Driven Acceleration of Particle-Based Fluid Simulations

Korea Advanced Institute of Science and Technology, exchange student 09/2019–12/2019

Technical University of Munich, M.Sc. Materials Science and Engineering 10/2018–03/2021
Specialization: Uncertainty Quantification and Mathematical Modeling
Final Grade: 1,2 (passed with high distinction); *Thesis*: Levy-Driven Langevin Monte-Carlo
Scholarships: Deutschlandstipendium; Hans-Rudolf-Stiftung

Technical University of Munich, B.Sc. Engineering Science 10/2016–03/2019

Munich University of Applied Sciences B.Eng. Building Services Engineering 10/2013–09/2017

SELECTED WORK EXPERIENCE

Research Visit, Institute for ML (Johannes Brandstetter), Johannes Kepler University Linz, AT 08/2024
Project: Large-scale machine learning for partial differential equations

Research Visit, VIS Lab (Efstratios Gavves), University of Amsterdam, NL 07/2023
Project: Coupling implicit neural representations of fluid dynamics data with GNNs

Research Assistant, Bavarian Center for Applied Energy Research, GER 07/2017–12/2017
Project: Integration of latent heat storage into a heat pump system

Working Student, Eura Ingenieure Weißmann, GER 05/2014–10/2017
Position: Technical design and monitoring of building services systems
Responsibilities: Conducting interdisciplinary work to meet client needs cost-effectively, adhering to regulations

SELECTED PUBLICATIONS

Neural SPH: Improved Neural Modeling of Lagrangian Fluid Dynamics ICML '24
A. P. Toshev, J. A. Erbesdobler, N. A. Adams, J. Brandstetter

JAX-SPH: A Differentiable Smoothed Particle Hydrodynamics Framework AI4DiffEq @ ICLR '23
A. P. Toshev, H. R., J. A. E., G. G., J. Brandstetter, N. A. Adams

LagrangeBench: A Lagrangian Fluid Mechanics Benchmarking Suite NeurIPS '23 D&B
A. P. Toshev*, G. Galletti*, F. Fritz, S. Adami, N. A. Adams

Accelerating Molecular Graph Neural Networks via Knowledge Distillation NeurIPS '23
F. E. Kelvinius*, D. Georgiev*, A. P. Toshev*, J. Gasteiger

Learning Lagrangian Fluid Mechanics with E(3)-Equivariant Graph Neural Networks GSI '23
A. P. Toshev, G. Galletti, J. Brandstetter, S. Adami, N. A. Adams

TEACHING & SUPERVISION

AI for Science Seminar, Inception of new seminar series summer '23 & '24

Introduction to Scientific Machine Learning for Engineers, Lecture & Exercise fall '22, '23 & '24
Mentoring: Jonas Erbesdobler (M.Sc. Thesis), Harish Ramachandran (M.Sc. Thesis), Gianluca Galletti (M.Sc. project), Johannes Sautier (B.Sc. Thesis), Milan Cupac (B.Sc. Thesis)

TECHNICAL SKILLS

Deep Learning Stack: JAX (expert), PyTorch (advanced)
Development Tools: Python (expert), Git (advanced), Bash/Linux (advanced), Matlab (advanced)
Languages: Bulgarian (native), English (fluent), German (fluent), Spanish (intermediate)