



Dr.-Ing. Michał Mika

Computational Mechanics · High-Performance Computing · Software

Computational engineer specializing in modern, matrix-free, highly efficient and scalable simulation methods · From mathematical modeling through method development, implementation and verification to industrial validation.

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PUBLICATIONS

14

CONFERENCE
CONTRIBUTIONS

5

COURSES TAUGHT

6

YEARS IN RESEARCH

CONTACT

EMAIL
michal@mika.sh

WEB
<https://mika.sh/>

LOCATION
Darmstadt, Germany

DATE OF BIRTH
20 Aug 1995

LANGUAGES

German ●●●●●
English ●●●●●
Polish ●●●●●

SOFT SKILLS

Communication Empathy
Perspective-Taking Agile
Scrum Planning & Organization

PROGRAMMING LANGUAGES

Julia MATLAB C/C++
Python Lua HTML/CSS
SQL PHP

TOOLS

GNU/Linux Git TDD
Agentic Workflows N8N
CI/CD Docker Proxmox

TEACHING & PERSONAL TRAINING

Course Design & Teaching · 3× Finite Element Methods · 2× Finite Difference Methods · Seminars.

CREATOR Autumn School 2024 · "Isogeometric Analysis" (IGA).

ACM Europe Summer School 2023 · "HPC Computer Architectures for AI and Dedicated Applications".

AWARDS & SCHOLARSHIPS

2021 Förderpreis, Victor Rizkallah Foundation

2019 PROMOS Scholarship (BMBF)

2016 Germany Scholarship (BMBF)

INTERESTS

Smart Home · Automation · Coffee · Guitar (Studio & Stage) · Health

PROFESSIONAL EXPERIENCE

- since 04/2026
Postdoctoral Researcher
Institute of Mechanics · Technical University of Darmstadt
Cut-cell quadrature · High-order explicit shell dynamics · 3D bioprinting & PIV
- 01/2022 – 03/2026
Research Associate
Institute of Mechanics · Technical University of Darmstadt
Doctoral research on matrix-free isogeometric methods · Responsibility for IT services, network architecture, hardware/software support, and procurement, and budget ownership · Design and teaching of university courses and seminars · Student supervision
- 04/2020 – 12/2021
Research Associate
Institute of Mechanics and Computational Mechanics · Leibniz University Hannover
Stochastic methods · Risk and reliability analysis
- 04/2017 – 10/2018
Intern
Dr. Ing. h.c. F. Porsche AG · Stuttgart
Validation of electrochemical simulations for cathodic electrodeposition coating.

EDUCATION

- 2022 – 2026
Dr.-Ing. Computational Mechanics
Technical University of Darmstadt
Dissertation on matrix-free tensor-product spline methods for isogeometric scientific computing. Final grade: very good.
- 04/2019 – 10/2019
Research Stay Abroad
Oden Institute · University of Texas at Austin · USA
Collaboration with Prof. T. J. R. Hughes on collocation methods for integral equations.
- 2018 – 2020
M.Sc. Computational Methods in Engineering
Leibniz University Hannover
Thesis on efficient Galerkin methods for random fields. Final grade: with distinction.
- 2014 – 2018
B.Sc. Computational Engineering
Leibniz University Hannover
Industry thesis at Dr. Ing. h.c. F. Porsche AG on inductively pre-gelled adhesives in thermomechanical simulations of body-in-white shells.

SELECTED PUBLICATIONS

- 2026 · [Computer Methods in Applied Mechanics and Engineering](#)
A data-driven approach to cut-cell quadrature using spline interpolation. [↗](#)
M. Mika, R. R. Hiemstra, S. K. F. Stoter, D. Schillinger.
- 2026 · [Journal of Scientific Computing](#)
Matrix-free inexact preconditioning techniques for isogeometric tensor-product discretizations. [↗](#)
M. Mika, R. R. Hiemstra, D. Schillinger.
- 2021 · [Computer Methods in Applied Mechanics and Engineering](#)
A matrix-free isogeometric Galerkin method for Karhunen–Loève approximation of random fields. [↗](#)
M. Mika, T. J. R. Hughes, D. Schillinger, P. Wriggers, R. R. Hiemstra.

+ 4 more peer-reviewed publications · 14 conference contributions (ECCOMAS, IGA, GAMM, SIAM UQ) · Full publication list, source codes, and supplementary results at <https://mika.sh/>.