

# Resumé



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## Education

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2018 – 2020 Computational Methods in Engineering (M.Sc.), Leibniz University Hannover.  
Thesis: *An isogeometric Galerkin method for Karhunen–Loève approximation of random fields. Graduation with distinction.*

Apr 2019 – Oct 2019 Overseas research project at the Oden Institute for Computational Engineering and Sciences, **University of Texas at Austin**. Adv.: Prof. Dr. Thomas J.R. Hughes.

2014 – 2018 Computational Engineering Science (B.Sc.), Leibniz University Hannover.  
Industry thesis at **Dr. Ing. h.c. F. Porsche AG**: *Analysis of inductively pre-gelled adhesives in thermo-mechanical simulation of curing processes.*

## Professional experience

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since April 2020 Graduate research assistant at the Institute of Mechanics and Computational Mechanics, Leibniz University Hannover. Adv.: Prof. Dr.-Ing. Dominik Schillinger.  
*New numerical methods for cavitating flows.*

Apr 2017 – Oct 2018 Internship at **Dr. Ing. h.c. F. Porsche AG**, Stuttgart, Germany.  
*Validation of electro-chemical e-coating simulations.*

## Publications

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2021 **M. Mika**, R.R. Hiemstra, T.J.R. Hughes, D. Schillinger, *A comparison of matrix-free isogeometric Galerkin and collocation methods for Karhunen–Loève expansion*, [arXiv:2101.00629](https://arxiv.org/abs/2101.00629). (preprint)

2021 **M. Mika**, T.J.R. Hughes, D. Schillinger, P. Wriggers, R.R. Hiemstra, *A matrix-free isogeometric Galerkin method for Karhunen–Loève approximation of random fields using tensor product splines, tensor contraction and interpolation based quadrature*. Computer Methods in Applied Mechanics and Engineering, Vol. 379, June 2021, <https://doi.org/10.1016/j.cma.2021.113730>.

2017 **M. Mika**, M. Dannert, F. Mett, H. Weber, W. Mathis, U. Nackenhorst, *Electrostatic sensor modeling for torque measurements*. Advances in Radio Science, Vol. 15, p. 55-60, September 2017, <https://doi.org/10.5194/ars-15-55-2017>.

## Conferences

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2021 *A performance comparison of matrix-free isogeometric Galerkin and collocation methods for Karhunen–Loève expansion*. 91. **GAMM** Jahrestagung, März 2021, Kassel, Deutschland.

- 2021 *A fast and low-memory isogeometric Galerkin method for Karhunen–Loève approximation of random fields.* 14. **WCCM ECCOMAS** Congress, January 2021, Paris, France.
- 2020 *A matrix-free isogeometric Galerkin method for Karhunen–Loève approximation of random fields using tensor product splines, tensor contraction and interpolation based quadrature.* VIGA2020, Virtual Isogeometric Analysis Conference, USA, August 2020.
- 2017 *Electrostatic sensor modeling for torque measurements.* Kleinheubacher Tagung, September 2017, Miltenberg, Germany.

## Scholarships

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- 2019 Leibniz PROMOS Stipendium, Federal Ministry of Education and Research (BMBF), Germany.
- 2016 Deutschland Stipendium, Federal Ministry of Education and Research (BMBF), Germany.