Jan Habscheid

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Education

M.Sc. Computational Engineering Science 10/2024 – 03/2026 (expected)

RWTH Aachen University (Germany)
GPA: 1.0 *(German system: 1.0 (best) to 6.0 (worst))*

- Thesis: *Modeling and Analysis of Nonlinear Closures in Hierarchical Moment Equations Using Discontinuous Galerkin Methods* (expected to be finished in 03/2026)
  - Analyzing accuracy and structure-preserving properties of Gramian closures
  - Implementing moment equations with Gramian closures in Trixi.jl.
- Exchange semester at *Universitetet i Stavanger* (01/2025 – 06/2025)

B.Sc. Computational Engineering Science 10/2020 – 09/2024

RWTH Aachen University (Germany)
GPA: 1.3 (with distinction) *(German system: 1.0 (best) to 6.0 (worst))*

- Thesis: *Numerical Treatment of a Thermodynamic Consistent Electrolyte Model*

Work Experience

Research Intern 10/2023 – 03/2024

ZF Friedrichshafen AG (Germany)

- Improved the service life analysis of multiphysical inverter systems by developing a methodology for reduced-order models (ROM).

Student Assistant 10/2022 – 02/2025

Chair for Applied and Computational Mathematics, RWTH Aachen University

- **Scientific Software Engineering (10/2024 – 02/2025):** Developed and maintained the open-source finite element solver fxdgm (Python/FEniCSx).
- **Mathematical Modeling (04/2023 – 09/2023):** Derived an analytical solution and implemented a finite difference discretization for a coupled, linearized system of PDEs.
- **Teaching Assistant:** Conducted exercise sessions and corrected homework exercises for *Foundations of Mathematics I* (10/2025 – present) and *III* (10/2022 – 03/2023).

Publications

Habscheid, Jan, Satyvir Singh, Lambert Theisen, Stefanie Braun, and Manuel Torrilhon (2026). "A finite element solver for a thermodynamically consistent electrolyte model". In: *Computer Physics Communications* 319, p. 109916. ISSN: 0010-4655. DOI: https://doi.org/10.1016/j.cpc.2025.109916.

Skills

Programming	Python (FEniCS, NumPy, SciPy, Scikit-Learn, TensorFlow 2, Keras, Matplotlib) Julia (Trixi.jl), C++
CAD/CAE	Creo Parametric, Simcenter FloEFD, Simcenter Amesim
Tools & Platforms	Linux (Ubuntu), Git, Docker, ParaView, LaTeX
Languages	German (native), English (C1, IELTS 7.5/9.0)

Last updated: February 22, 2026