Pascal **Strauch**

Mechanical Engineer · Software Development

A versatile and proactive Mechanical Engineer with a strong foundation in both traditional engineering principles and modern software development. Passionate for innovation and a natural curiosity for exploring new technologies, constantly seeking opportunities to expand my knowledge and expertise. I thrive on challenges that require ingenuity and creative problem-solving, and I am committed to delivering high-quality solutions that drive impactful results.

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Education

Karlsruhe Institute of Technology (KIT) — *Karlsruhe, Germany*

M.Sc. Mechanical Engineering — *Oct. 2022 - Present*

- Specializing in Automation Technology and Medical technology

Karlsruhe Institute of Technology (KIT) — *Karlsruhe, Germany*

B.Sc. Mechanical Engineering — *Oct. 2018 - Sep. 2022*

- Specializing in Energy Technology
- Final grade: 1.7
- Bachelor's thesis: User-oriented building control for thermal comfort - grade: 1.0

Skills

Engineering	Modeling & Simulation, Thermodynamics, Machine Learning, System Automation, Robotics
Programming	MATLAB/Simulink, Python, JavaScript, ANSYS, C++, Node.JS, LaTeX
Web	React with NextJS, Firebase, HTML5, CSS
Languages	English C2, German C2, Spanish A2

Experience

Siemens AG — *Karlsruhe, Germany*

Working Student — *Dec. 2023 - Present*

- Developing and testing of innovative sensor technologies while enhancing automation across systems and processes.
- Mobile app development initiative for condition monitoring, involving prototyping, integration with actuators and sensors, and creation of a mobile dashboard for enhanced data visualization and analysis.

UNC Charlotte — *Charlotte, NC, U.S.A*

Research Scholar — *April - Oct. 2023*

- Conducted research internship at the University of North Carolina Charlotte, focusing on modeling residential buildings with distributed energy resources such as PV, batteries, and electric vehicles.
- Designed and implemented an optimized control strategy in MATLAB, considering grid stability, peak load reduction, and the optimization of demand flexibility events through model predictive control.
- Published journal paper on "Model Predictive Control for Demand Flexibility of a Residential Building with Multiple Distributed Energy Resources".

QualiMe — *Karlsruhe, Germany*

Co-Founder And Developer — *Nov. 2022 - Present*

- Mobile app development with state-of-the-art frameworks.
- Full-stack development emphasizing user-friendly interface and productivity tools like journaling for self-improvement.

Bosch Thermotechnik — *Wernau, Germany*

Research and Development Engineer — *May 2022 - Sep. 2022*

- Modeling, simulation, automation, and development of component tests for a ventilation system in residential buildings using MATLAB/Simulink.
- Modeling of a heat exchanger and validation of the model with real measurement data in MATLAB/Simulink.
- Collaborated on the development of an innovative tightness concept for a ventilation unit.

Institute of Fluid Dynamics (KIT - ISTM) — *Karlsruhe, Germany*

Academic Assistant — *June - Dec. 2021*

- Conducted a CFD simulation with ANSYS and supported the research of plasma actuators for friction reduction.