

KAI RUTH

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<https://github.com/Kai360-dot>

TECHNICAL SKILLS

Programming	C++, Python, HTML/CSS, Bash, Unix, GAMS
Software & Tools	Aspen Plus, OpenFOAM, Autodesk Inventor/Fusion360, ORCA
Skills	CFD, CAD, PFDs & P&IDs, systems modeling, mathematical programming, process optimization, embedded systems, additive manufacturing, laser cutting

EXPERIENCE

Industry internship *March 2025 - June 2025*
Internship at F. Hoffmann-La Roche, Basel: evaluated DSC thermal methods, implemented model-free kinetics in Python, and developed multiphysics/CFD models to predict pressure evolution in thermal safety tests

Research project *September 2023 - June 2024*
Membrane-less alkaline electrolysis prototypes via additive manufacturing (plate and tubular): designed and tested 3D-printed cells, investigated sealing, gas separation and ohmic losses, and issued design guidelines — Stark-Group (ICB, ETH Zurich)

Teaching Assistant *September 2022 - Present*
Inorganic Chemistry (529-0012-02L)
General Chemistry (529-2001-02L)

Tutor *2020 - 2024*
Teaching Math, Physics and Chemistry to high-school and university students

EDUCATION

ETH Zurich, Switzerland
Chemical Engineering BSc. *September 2021 - September 2024*
Process Engineering MSc. *September 2024 - Present*

Ferdinand Porsche High School, Germany
High School Degree *July 2020*

AWARDS

Mathematics Award (top of graduating class)	<i>July 2020</i>
Chemistry Award (top of graduating class)	<i>July 2020</i>
Sustainability Award	<i>July 2020</i>

LANGUAGES

German, English	Fluent
French, Russian	Basic

EXTRA-CURRICULAR

Member of ETH Zurich's Student Biolab, supporting student-led research and organizing hackathons
Prototyped projects and supported fellow students at ETH Zurich's Student Project House