

Kristina Trovik Flaatten

PhD candidate in Process and Power, NTNU, Trondheim, Norway

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RESEARCH INTERESTS

Hydropower, Hydraulic machinery, Reversible pump turbines, Fluid mechanics, Hydraulic structures

EDUCATION

Norwegian University of Science and Technology, Trondheim, Norway August 2025 - now
PhD programme in Process and Power at the Waterpower Laboratory
Research focus on reversible pump-turbines and flood control

Norwegian University of Science and Technology, Trondheim, Norway August 2020 - June 2025
Master of Science in Energy and Environmental Engineering Cumulative GPA: 4.55/5.00
Specialization in Energy and Process Engineering

University of British Columbia, Vancouver, Canada September 2022 - April 2023
Exchange year: 4th and 5th semester Cumulative GPA: 4.12/4.33

PREVIOUS EXPERIENCE

SINTEF Energy Trondheim, Norway
Summer Researcher in affiliation with INDEE+ June 2024 - August 2024

- Lab work running a multifunctional CO₂ heat pump rig.
- Data analysis, uncertainty calculations, and visualization.
- Development of a MATLAB simulation of the heat pump system.
- Presentation of results at a research conference.

Hywer Dale, Norway
Summer Intern May 2023 - August 2023

- Literature review on the submergence of intake structures and vortex formations.
- Interviews with operations managers regarding challenging intakes.
- Review of technical drawings of intake structures with focus on design guidelines.
- Field work and site inspections of SHPP intakes.

NTNU Trondheim, Norway
Teaching Assistant
Engineering Thermodynamics 1 (TEP4120) Fall 2023 & Fall 2024
Mechanical Design, Operation and Maintenance of Hydraulic Machinery (TEP4200) Spring 2025

- Part-time job, 90-120 hours per semester.
- Holding weekly assignment guidance lessons.
- Correcting exercise assignments and lab reports.

Tekna Trondheim, Norway
Course Instructor November 2024

- Teaching a 4-hour exam preparation course in engineering thermodynamics for a class of 76 students.

OTHER EXPERIENCES

Experts in Teamwork Trondheim, Norway
Multi-disciplinary teamwork course for 4th year students at NTNU.
Facilitator Spring 2022 & Spring 2024

- Facilitating student teams to encourage effective collaboration.
- Planning and execution of teaching throughout the semester along with the facilitator-team.

MentorNorge Trondheim, Norway
Mentor August 2020 - August 2022

- One-on-one digital tutoring in mathematics at levels between 5th grade and high-school.
- Adapting teaching methods to fit the student's individual needs.

SELECTED COURSES

Master's Courses

- TEP4200 - Mechanical Design, Operation and Maintenance of Hydraulic Machinery
- TEP4195 - Turbo Machinery
- TVM4128 - Hydropower and Hydraulic Engineering, Advanced Course
- TEP4156 - Viscous Flows and Boundary Layers
- TEP4240 - System Simulation

Additional Courses

- IØ3000 - Advanced Foundations for Group Process Facilitation
- TIØ4306 - Strategies for Industrial Sustainability

Bachelor's Courses

- TVM4165 - Hydropower Structures
- TEP4280 - Introduction to Computational Fluid Dynamics
- CIVL 316 - Hydrology and Open Channel Flow
- CIVL 315 - Fluid Mechanics II
- TDT4102 - Procedural and Object-Oriented Programming
- CPSC 203 - Programming, Problem Solving, and Algorithms

AWARDS

Best booth at the research fair during Forskningsdagene 2024.

Part of the team for HydroCen's "Ren energi for fremtida di!" booth at Forskningsstorget.

Trondheim, Norway
September 2024

Best Student of 2022 for Energy and Environmental Engineering

Awarded by the Christian F. Grøner's Foundation to the 3rd year student with the best grades.

Trondheim, Norway
September 2022

Third Place in Young Researchers (Unge Forskere) 2020

Awarded in the category "Science and technology" for a research paper on the mathematics of origami.

Oslo, Norway
June 2020

SKILLS

- **Programming:** Python; MATLAB; C++; R
- **Software:** MATLAB; Microsoft Office; LaTeX; Figma; OpenFOAM; VS Code
- **Languages:** Norwegian (fluent); English (fluent); French (beginner)
- **Soft Skills:** Leadership; conflict resolution, team management; effective communication; problem-solving

REFERENCES

Krzysztof Banasiak

Senior Research Scientist, Thermal Energy, SINTEF Energy Research, Trondheim, Norway

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Scholar Profiles: [SINTEF - Employee Page](#)

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