Elijá Friedrich-Ulrich

MSc OMICS Technologies and Data Science in Biomedicine · IMC Krems, Austria — BSc Medical & Pharmaceutical Biotechnology, passed with distinction

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Summary

I finished my BSc in Medical & Pharmaceutical Biotechnology with distinction in 2026 and am now in the OMICS Technologies and Data Science in Biomedicine master's programme at IMC Krems. My bachelor work ran inside the EcoCoat project: adaptive laboratory evolution of E. coli 498 against toxic industrial reaction water, from morbidostat selection to data analysis.

Experience

Scientific Staff — EcoCoat Project Apr 2026 – present

IMC Krems University of Applied Sciences · Krems an der Donau, Austria

- Designed and ran 21 morbidostat ALE experiments (Replifactory) with E. coli 498, up to 70% industrial reaction water.
- Built Python pipelines (pandas, NumPy, Matplotlib) to process the time-series data and track OD600 adaptation.
- Setting up Microtox ecotoxicity bioassays (Aliivibrio fischeri, in progress).
- Industry collaboration with Kansai Helios (Austria & Slovenia) on the EcoCoat FFG-funded research project.
- Set up and structured the group's eLabFTW electronic lab notebook, consolidating a Microsoft Teams import by merging 59 file-level experiments into grouped experiments and resources.
- Presented research results to Kansai Helios R&D in Slovenia and other academic and industrial partners.

Project Intern — EcoCoat Project Sep 2025 – Mar 2026

IMC Krems University of Applied Sciences · Krems an der Donau, Austria

- Used adaptive laboratory evolution (ALE) to engineer E. coli that can grow on industrial reaction water from Kansai Helios Austria GmbH as a carbon source.
- Designed and ran evolution experiments, monitored adaptation gains, and analyzed carbon utilization and toxicity to support more sustainable bioprocessing.

Food Server May 2023 – Oct 2023

Mang Hermenegild Heurigenschank · Weißenkirchen in der Wachau, Austria

- Part-time front-of-house work in a busy Heuriger — fast service and a lot of teamwork.

Veterinary Assistant 2020 - 2023

Praxisgemeinschaft Steindl & Kraft · Lower Austria, Austria

- Assisted with clinical procedures, diagnostics, animal handling, and daily practice operations.

Education

MSc OMICS Technologies and Data Science in Biomedicine 2026 – present

IMC Krems University of Applied Sciences · Krems an der Donau, Austria

- Master's programme in omics technologies and data-driven life science.

BSc Medical & Pharmaceutical Biotechnology — passed with distinction (2026) 2023 - 2026

IMC Krems University of Applied Sciences · Krems an der Donau, Austria

- Bachelor thesis: Adaptive laboratory evolution of E. coli 498 to toxic paint and resin residues in industrial reaction water.

Advanced High School Program — Life Sciences 2019 - 2023
Mary Ward Privatgymnasium · Krems an der Donau, Austria

- Secondary education with a Life Sciences focus.

Projects

Next Horizon Society — Co-Founder 2025 - present
Next Horizon Society

- Co-founded a community platform for evidence-based content on health, sustainability, and personal growth.
- Responsible for long-form writing, editorial planning, and recurring newsletter publication.

SKYDOK — Creative Pre-Incubator 2024
IMC Krems University of Applied Sciences · Krems an der Donau, Austria

- Developed drone startup concept through an intensive pre-incubator program.
- Completed workshops on business development, sales strategy, and HR fundamentals.

Skills

Laboratory
Adaptive laboratory evolution (ALE) • Morbidostat / Replifactory • Microbial cultivation & fermentation • Aseptic technique • Microtox ecotoxicity bioassay (in progress)

Bioprocess
Bioreactor operation • Design of experiments (DOE) • Dose-response characterization

Data & Programming
Python (pandas, NumPy, Matplotlib) • JMP • Excel • Time-series analysis

Bioinformatics
Sequence analysis • Pathway analysis (developing)

Tools & Software
Notion • Zotero • Git / GitHub • Cursor

Professional & Soft Skills
Project management • Business development • Sales strategy • Communication • Analytical thinking • Critical thinking • Workload prioritization

Languages

Languages
German (native) • English (fluent)