

Lizat Ivan

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EDUCATION

Technical University of Munich

M.Sc. in Energy & Process Engineering

Munich, DE

2020–2023

- Master Thesis: “Predictive-Corrective Smoothed Particle Hydrodynamics (PCISPH) for high-pressure gradient flows”
- Semester Thesis: “Smoothed Particle Hydrodynamics Simulation of a Liquid Chromatography Column”

Graz University of Technology

B.Sc. in Process Engineering

Graz, AUT

2016–2020

- Thesis: “Hydrogen production with inherent carbon dioxide and nitrogen sequestration”

Secondary School for Industrial and Environmental Chemistry

Upper Secondary Technical and Vocational School Matura.

Vorarlberg, AUT

2012–2016

- Thesis: “Effectiveness of catalysts in the production of polyurethane foams.”
- Accelerated through one years due to prior education and experiences.

Landesbrerufschule Donrbirn 2

Chemical Laboratory Assistant, Vocational schoo

Vorarlberg, AUT

2007–2012

EXPERIENCE

Varo Energy Germany GmbH

Commercial Analyst, Supply and Trading

Hamburg, DE

Jun 2022 - ongoing

- Exposure management for the german gasoline & distillates book.
- Check PnL reports and report explanation to bookleads.
- Analysis of the german terminal - retail structure and reporting to senior management, analysis included seting up and solving an LP to find optimal routes.
- Contract management.

Technical University of Munich

Research Assistant, Chair of Aerodynamics and Fluid Mechanics

Munich, DE

Jun 2022 - Sep 2022

- Implemented a Digital Twin.
- Developed a Model of Computation (MOC) for recoating step in metal alloy 3D printing, using the DEM library LIGGGHTS and other open source libraries.
- Containerized the pipeline connecting the in-house smoothed particle dynamics code and the LIGGGHTS library, to optimize workflow, and addressed domain transfer issues.

Bertch Energy GmbH & CO KG

Summe Intern, Service Derpartment

Vorarlberg, AT

Apr 2020 - Aug 2020

- Transient simulation of a 50 MWh fluidized bed biomass combustion plant
- Abstracted dynamic subsystems for integration, and reviewed literature for model development.
- Implemented a linear two-phase combustion chamber model, utilizing Matlab, Simulink, and C.

Graz University of Technology

Undergraduate Research Fellow, Institute of Process- and Particle Engineering

Graz, AT

Sep 2019 - Sep 2020

- Advanced Scale-Up of an Ionic-Liquid-Based Polypropylene Recycling Process

- Executed comprehensive literature research, examined the precipitation behavior of polypropylene, and devised reactor design. Implemented ultrasound penetration during precipitation process, leading to a 30% reduction in solvent requirement

Graz University of Technology

Student Assistant, Institute of Chemical Engineering and Environmental Technology

Graz, AT

Sep 2018 - Jun 2019

- Pilot Plant Optimization at Container Scale
- Supported PhD candidates in research, aiding in process enhancement and material development for the Reformer Sponge Iron Cycle (RESC)
- Implemented pressure-swing evacuation leading to a significant reduction in carrier gas usage
- Managed carrier material synthesis and post-processing, involving tasks such as milling, sieving, wet-granulating, and sintering

Getzner Werkstoffe GmbH

Research & Development Intern

Dornbirn, AT

Aug 2014 - Aug 2018

- Diverse R&D Summer Internships with Leadership Experience
- Engaged in comprehensive projects including catalyst research, reaction kinetics exploration, educt chain length/product property interaction, cell structure optimization, and microwave PUR interaction studies
- In addition to my own project responsibilities, I provided guidance and supervision to a fellow intern

Getzner Werkstoffe GmbH

Chemical Laboratory Assistant

Dornbirn, AT

Sep 2008 - Mar 2012

- Vocational Training as Chemical Laboratory Assistant
- Gained hands-on experience at every stage of the production lifecycle, from preliminary lab-scale tests to quality management adaptations, fostering a rounded understanding of production and new product development

SKILLS

- **Programming Languages:** Python, Matlab, C/C++, MPI
- **Tools/Technologies:** LaTeX, Git, Docker, Bash-Scripting
- **Engineering Tools:** Aspen HYSYS, OpenFOAM, LiGGHTS
- **Office Tools:** Excel(VBA), Powerpoint, Word, Access
- **CAD / CAM:** AutoCAD, Inventor, SolidWorks

LANGUAGES

- **English:** C2 (native proficiency)
- **German:** C1 (advanced proficiency)
- **Croatian:** C1 (advanced proficiency)