AMEDEO CERUTI

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Im Sträler 7, 8047 Zürich, Switzerland

EDUCATION

Sep. 2019 – Oct. 2021	**M. Sc. Chemical Engineering**, Technical University of Munich (TUM) – Munich, Germany
2014 – 2019	**B. Sc. Chemical Engineering**, Polytechnic University of Catalonia BarcelonaTech (UPC) **–** Barcelona, Spain

EXPERIENCE

May 2021 – Sep. 2021 — Research project, **Chair of Energy Systems (ES TUM)** – Prof. Spliethoff

- Topic: Entrained flow gasification reactor modelling with MATLAB.
- Coded an OOP implementation of a solid-gas pyrolysis model with heat and mass transfer, improving required CPU clock time by over 78 %.

Nov. 2020 – May 2021 — Master thesis, **Chair of Process Systems Engineering (AVT RWTH Aachen University)** – Prof. Mitsos

- Topic: Bayesian optimization und Diffusion Maps for autonomous decision making in chemistry.
- Performed global optimization of reaction systems with data-driven machine learning methods.
- Cooperation with research groups of RWTH Aachen, University of Cambridge and Johns Hopkins University.

Feb. 2020 – Mar. 2021 — Student Research Assistant, **Institute for Machine Tools and Industrial Management (IWB TUM)** – Prof. Reinhart

- Developed and optimized cell finishing processes for novel Lithium-ion batteries, researched with both model-based and experimental methods.
- Co-authored a conference paper for the *54th CIRP Conference on Manufacturing Systems* (accepted as of June 2021).

May-Sep. 2020 — Research Project, **Chair for Technical Chemistry 1 (TC1 TUM)** – Prof. Hinrichsen

- Modelled a three-phase chemo-enzymatic reaction system for the epoxidation of oleic acid and its downstream process.

Feb.-June 2019	Bachelor thesis, **Isophytol Cluster** (**BASF)** – Ludwigshafen, Germany

- Title: „*Application of a soft sensor for distillate composition estimation to a dividing wall column control system*".
- Applied data-driven models to a dividing wall distillation column.

Oct. 2018 – Feb. 2019	Research Internship, **Cetaqua** – **Water Technology Centre** (**SUEZ**) – Barcelona, Spain

- Developed an indicator framework to assess the circular economy of the industrial water cycle in Spanish municipalities.
- Calculated the carbon footprint of the company according to ISO 14064 in collaboration with external consultants.

Jul.-Oct. 2018	Internship, **Innovative and Prototype Solutions (BASF)** – Ludwigshafen, Germany

- Automated design and multi-objective optimization of pressure vessels in accordance with DIN EN 13445 and AD-2000.

LANGUAGES

Spanish, German, Italian, Catalan	First language
English	Proficient

SOFTWARE SKILLS

Languages	Python, MATLAB, R, VBA
CAD	SolidWorks, Inventor
Optimization	MAiNGO, Pyomo, GAMS, SIEMENS HEEDS
CAE	Aspen Plus, ANSYS, CAPE-OPEN interface standard

OTHER PROJECTS

2020	Participated in the „*Gaussian Process Summer School*" at Sheffield University.
2019	Organized the „*PSE Summer School*" in Barcelona, Spain.
2017-2018	President, UPC AIChE Student Chapter
2017	Attended the „*10th World Congress of Chemical Engineering*" in Barcelona, Spain
2014-2016	Professional Water Polo player in Spain