

Balint Magyari



📍 Naples, Italy

☎ +36 30 200 0248 ✉ balint.magyari@icloud.com

🌐 [linkedin.com/in/balintmagyari](https://www.linkedin.com/in/balintmagyari) 🐙 github.com/balintmagyari

PROFESSIONAL SUMMARY

Ambitious Chemical Engineer and Marie Skłodowska-Curie Doctoral Researcher with a strong background in solving complex technical problems. Possesses a strong academic background—including a *Cum Laude* Master’s degree in Advanced Process Technology—coupled with impactful industrial experience. Has the ability to bridge experimental laboratory research with computational modeling and Python programming to develop efficient data solutions and automate processes. Possesses a strong background in converting complex data into effective engineering models with a proven ability to drive innovative R&D projects and adapt quickly to new technical domains.

EDUCATION

PhD Marie Skłodowska-Curie Action “ReBond”
University of Naples Federico II & University of Crete

2024 – Present
Naples, Italy & Heraklion, Greece

MSc Chemical Engineering – Cum Laude
University of Groningen

2022 – 2024
Groningen, Netherlands

- **Specialization:** Advanced Process Technology

BSc Chemical Engineering
University of Groningen

2019 – 2022
Groningen, Netherlands

PROFESSIONAL EXPERIENCE

Doctoral Researcher
University of Naples Federico II & University of Crete

2024 – Present

- **Designed and performed large-scale computational simulations** (Molecular Dynamics) to predict the physical properties and real-world behavior of advanced smart materials.
- **Engineered custom Python algorithms** to perform complex statistical modeling (Monte Carlo moves), seamlessly integrating these scripts with high-performance simulation engines to dynamically control structural changes during runtime.
- **Analyzed complex datasets** to characterize key material properties, mapping out everything from microscopic phase separation to macroscopic flow dynamics (linear and nonlinear rheology).

Industrial Intern, Automation & Process Intelligence
MOL Group, Danube Refinery

March 2024 – August 2024
Százhalombatta, Hungary

- **Engineered a custom Python package** to automate fast and efficient data retrieval directly from the refinery’s internal PI System.
- **Developed predictive engineering models** to successfully analyze and forecast the energy usage of various critical refinery assets.
- **Executed complex industrial data solutions** during a five-month internship under the supervision of Dr. László Szabó.

Master's Research

2023 – 2024

University of Groningen

- **Synthesized advanced nanomaterials** via controlled radical polymerization, developing polymer-grafted silica nanoparticles for Enhanced Oil Recovery (EOR).
- **Characterized complex fluid dynamics** by investigating the rheological properties of the synthesized solutions to map out their shear-thinning behavior.
- **Conducted research under the direct mentorship** of Prof. Patrizio Raffa and Prof. Daniele Parisi, successfully applying essential chemical engineering principles to develop complex R&D projects.

Bachelor's Research

2022

University of Groningen

- **Conducted computational fluid dynamics (CFD) simulations** focusing on the underlying mechanics of the Magnus effect.

Multiple Teaching Assistant Roles

April 2021 – June 2023

University of Groningen

Groningen, Netherlands

- **Instructed and evaluated undergraduate students** across multiple practical lab courses (Synthesis 1&2, Organic Chemistry), enforcing strict safety protocols and grading daily scientific reports.
- **Led weekly mathematical tutorials** in Linear Algebra and Multivariable Calculus, developing the foundational math skills of first-year chemistry and engineering students.
- **Supported university faculty** as a digital infrastructure assistant, troubleshooting day-to-day technical challenges during the transition to online teaching due to the Covid pandemic.

OTHER EXPERIENCES

Engineering Club Member

2018

International School of Amsterdam

- **Developed creative problem-solving skills** by actively applying scientific and engineering principles to hands-on technical challenges.

Modern Pentathlon

2009 – 2019

- Competed regularly in swimming, running, shooting and fencing for ten years.
- Won the Hungarian nationals in relay and finished fourth place individually in 2014.

AWARDS & ACKNOWLEDGEMENTS

Duke of Edinburgh Awards (Gold, Silver, Bronze)

2016 – 2018

- **Earned three consecutive awards** by successfully navigating multi-day wilderness expeditions across France, Scotland, and Belgium.
- **Demonstrated strong teamwork and resilience**, pushing personal limits by hiking an average of 20 kilometers daily while collaborating with peers to overcome complex physical and navigational challenges.

LANGUAGES

Hungarian (Native) | **English** (Bilingual) | **Spanish** (B1) | **Italian** (A2)