

HAMZA CHARIF

ENGINEERING STUDENT | PROCESS MODELLING & OPTIMISATION FONDATION MINES-TÉLÉCOM EXCELLENCE SCHOLARSHIP RECIPIENT (2026)

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Dual-degree engineering student at IMT Mines Albi, ranked first at École d'Ingénieurs Abulcasis. I combine process engineering, numerical modelling and optimisation to turn real industrial processes into defensible decisions. Seeking a four-month assistant-engineer internship from mid-April 2027 in process simulation, optimisation/operations research or scientific software, with a preference for flexible or hybrid work.

EDUCATION

IMT Mines Albi - Albi, France

2026 - 2028

Dual degree - General Engineering degree, student path - expected 2028

- Broad-based engineering curriculum; specialisation selected in Year 3. Relevant coursework: discrete optimisation.

École d'Ingénieurs Abulcasis (UIASS) - Rabat, Morocco

2024 - 2028

Engineering degree in Pharmaceutical Industrial Process Engineering - expected 2028

- Ranked **1st in cohort**; completing the programme through a dual-degree pathway with IMT Mines Albi.

Lycée Moulay Youssef Preparatory Classes - Rabat, Morocco

2021 - 2024

Scientific preparatory programme for engineering schools

- Entered engineering school through Morocco's National Common Entrance Examination (CNC).

INDUSTRIAL EXPERIENCE

PHI Institute - Rabat / Ain Aouda, Morocco

Feb-Apr 2026

Individual industrial project - Batch-coating process optimisation

- Shadowed operators and reviewed SOPs; combined mass/energy balances, solvent and HSE analysis, production sequencing and digitalisation proposals.
- Calculated a compounded **~60% reduction** in elapsed time between consecutive batches, including inter-operation intervals; projected result, not a post-implementation measurement.

BIOPHARMA - Rabat, Morocco

Oct 2024-Jan 2025

Process engineering intern - PW/WFI utility study for veterinary injectables

- Co-documented a **400 L/h PW and 250 L/h WFI** station; owned the deionisation, storage and multiple-effect distillation (MED) nodes.
- Built current and terminal-UF flowsheets, Python mass/energy balances and a vendor comparison to frame targeted investment options.
- Co-authored a **40+ page** report supporting terminal UF; the lead engineer reported that it informed the following IQ/OQ preparation cycle.

SELECTED OPEN-SOURCE PROJECT

RIDGE - Certified freeze-drying recipe design

Dec 2025-present

Recipe Identification via Discrete Gap-certified Enumeration - Open-source Python application

- Implemented a QSS model from governing equations (Newton solve, Euler through RK4) and a Landau-transformed Stefan problem solved by a vectorised NumPy method of lines.
- Verified the Stefan solver with manufactured solutions; recovered the lexmax policy through exhaustive GPU search, then proved its optimality for the Markovian model.
- Built dynamic programming around step budgets, discrete setpoints and PLC constraints, stopping at a certified gap from the continuous-control ideal.

SELECTION, ENGAGEMENT & LEADERSHIP

3rd Green Hydrogen Morocco Camp - UM6P, Benguerir

Jul 2026

Selected participant - Green hydrogen, Power-to-X and green ammonia

- Completed an intensive technical programme and collaborated in the final multidisciplinary hackathon, jointly presenting a response to a green-hydrogen value-chain challenge.

École d'Ingénieurs Abulcasis - School-wide Student Representative (RE)

2024 | 2025

Official institutional student role - appointed RE in 2025

- Cohort representative from 2024, then appointed school-wide RE in 2025; mediated between students and administration and helped organise Student Union events.

SKILLS

Programming: Python (NumPy, SciPy, pandas, Matplotlib, Numba), MATLAB, Julia, SQL; Git/GitHub, Linux, LaTeX, Typst, Excel

Modelling & optimisation: dynamic programming, discrete optimisation, optimal control, numerical methods, simulation

Process engineering: mass/energy balances, flowsheets, simulation, sizing; exposure to Aspen, ProSim, MATLAB/Simulink and COMSOL

Pharma & quality: GMP, familiarity with IQ/OQ/PQ and validation

Professional skills: teamwork, representative leadership, mediation, stakeholder communication, autonomy

Languages: Arabic native; French fluent; English C1 - Duolingo English Test 135/160 (Dec. 2025)