**Brahim Melliti**

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# About me:

Aspiring **chemical engineering professional** with an entrepreneurial spirit, a portfolio of engineering related projects and excellent computer skills looking for an opportunity to implement them, contribute to cutting edge projects and take on responsibilities in different technical areas.

# Education

## Bachelor's Degree in Chemical Engineering And entrepreneurship|Septembre 2018-aPril 2022 | University of Ottawa (Ottawa, Canada)

* Worked individually and in collaboration on multiple projects in the chemical engineering field from reactor design and process simulation (UniSim and Hysys) to biochemical engineering and Unit operation design (distillation towers, absorbers, and heat exchangers). Developed extensively my knowledge of process control strategies and methods and demonstrated it in my Capstone project, improving the safety and productivity of a propionic acid production plant.
* As part of engineering projects, I developed custom excel applications using Microsoft's Visual Basic for Applications and object-oriented programs using Java. My work in programming inspired me to gain knowledge in Python and apply Artificial Intelligence solutions to chemical engineering problems.

## medical degree | septembre 2014-OctobeR 2016 | Medical school of the University of Magdeburg (Magdeburg, Germany)

# Projects :

* Designed a plug flow reactor network to optimize the operating parameters increasing performance and yield.
* Comparison of two strains of ethanol-producing bacteria using experimental data to determine cell growth constants in Monod's equation.
* Simulated a formic acid plant on UNISIM and performed a costing analysis on the plant. Performed case studies on the effect of the ratio of raw materials on the energy consumption of the plant
* Simulated and optimized a distillation tower and performed an economic cost analysis to the tower.
* Developed a process control strategy for a series of CSTRs improving safety and productivity.
* Written programs as part of engineering projects:
* a VBA program that simulates heat dissipation in a metal rod.
* a multiple differential equations solver in VBA as a part of the reactor design project.
* a Java program that simulates and optimizes the operating conditions of flash separation
* Capstone project: I designed a propionic acid production plant producing 30,000 tons/year: Realization of the market study, bibliographic research (Reaxys, Scifinder, etc.) on the different chemical production routes, calculation of clean utility needs (steam, cold water), design and optimization of individual units, cost, profitability, risk (HAZOP) and feasibility analyses
* As part of my professional experience, I was mandated to collaborate with an engineering firm to assess the carbon footprint of the plant and do the preliminary engineering to carry out an electrification plan for steam production.

# Work experience

## Engineer in trainning | AEM Group Canada | July 2022

* Hydro-metallurgical process to produce high purity alumina (5N).
* Daily monitoring of plant performance, research of areas for improvement and management of optimization projects.
* Technical support for the operation based on data from the monitoring of purity analyzes carried out by the analytical chemistry laboratory.
* Legal and environmental monitoring of effluent water and cooling tower water.
* Updated P&IDs.
* Make recommendations on the type and size of equipment to be procured.
* Mass balances and stoichiometric calculation of the process.

## Lab technician | University of Ottawa | september 2021-April 2022

* Provided technical support to operate cameras and artistic production equipment and software in communication and visual arts.
* Ensured adequate reporting of student’s loan activities working with large data sets in Microsoft Excel, document management using Microsoft word and communication using outlook throughout the department
* Worked with my supervisor to develop new mixing proportions of chemicals used in film development reducing waste and cost.

## Inbound Agent | Costco wholesale | Mai 2019-july 2022

* Resolved a wide range of issues in complex situations such as lost or damaged orders and was able to make responsible decisions in a timely manner. I used my effective communication skills in French and English, time management and working under pressure to ensure coordination between suppliers, carriers, and customers. Use of software such as SAP and Oracle to store and manage customer and product data.
* Proactively used engineering optimization skills to develop a more efficient method of handling calls, cutting my average handle time in half helping the entire contact center achieve its overall performance goals.

# Skills

* Interpersonal and collaboration skills honed by years of customer service and work on projects with the ability to work on an individual basis and as part of a team, requiring minimal supervision.
* Project management principles: using time management and effective communication to outline goals and successfully deliver projects, good presentations, and reports within tight deadlines.
* Critical thinking skills: Identifying complex problems and using logic and reasoning to identify the strengths and weaknesses of alternative solutions
* Computer and programming skills: Advanced skills in Microsoft Office suite with emphasis on Excel. Programming skills in VBA, JAVA, and Python. Strong Process simulation skills on UNISIM and Hysys as well as strong Computer aided design skills on AutoCAD.
* Ability to read and develop process flow diagrams (PFD) and piping and instrumentation diagrams (P&IDs).
* Sense of entrepreneurship, economics, and finance skills: worked on accounting and marketing projects throughout my degree. Performed cost and profitability analysis for my Capstone project.

# Langues

* **English and French**: fluent (written and spoken proficiency); **German**: intermediate level; **Arabic**: native

# Honors/Awards

* **Merit scholarship (University of Ottawa)** - Scholarship awarded for high GPA and excellent academic achievement; **French studies scholarship** - awarded to international students pursuing their studies in French at the University of Ottawa

# Volunteer Work

* 2018 to 2021: **German interpreter** (Ottawa Hospital) - Collaborated with the Hospital of Ottawa to provide interpretation services to German speaking patients