Simone Reynoso Donzelli

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PROFESSIONAL BACKGROUND

•AI engineer *September 2025 - Ongoing*
Ernst and Young (EY) Frankfurt, Germany

– Migrated two chatbots from Autogen to LangGraph

•Quality control trainee *January 2025 - August 2025*
European Central Bank (ECB) Frankfurt, Germany

– Researched and implemented ML techniques for banknote watermark approval, exploring supervised and unsupervised anomaly detection methods using the Anomalib library and advanced computer vision models
– Designed and developed a custom GUI application for the Datacolor45IR spectrophotometer, enabling colorimetric calculations (CIE Lab and CMYK densities) for deployment in certified European banknote printing facilities
– Participated in on-site quality control inspections of printed banknotes and contributed to the drafting of official technical documentation for internal and external stakeholders

•Data scientist *October 2024 - December 2024*
Kaavio Remote

– Built an LLM-powered search engine with CrewAI which used a crew of agents to retrieve, validate, and summarize company information through keyword-based queries
– Leveraged experience to develop various projects: RAG-LLM chatbot, SQL-integrated agent, book recommender using semantic search (Projects)

•Process engineer *January 2024 - October 2024*
Cooper Standard Stratford, Canada

– Simulated product quality using a full ML pipeline: extracted data via SQL, processed inputs in Python, and trained XGBoost and neural network models. Integrated real-time predictions into the production GUI, reducing scrap by 90%
– Developed a rule-based control system using linear programming to optimize product selection in real time, with automated data input from SQL
– Implemented a quality monitoring classifier to flag out-of-spec data, enhancing model robustness with techniques like SMOTE for imbalanced datasets

ACADEMIC BACKGROUND

•Master of Science (Chemical Engineering) *January 2023 - December 2024*
University of Waterloo Waterloo, Canada

– Cumulative GPA: 9.2/10
– Focused on the optimization of chemical process flowsheets under both steady-state and dynamic conditions using advanced Reinforcement Learning techniques. Master's Thesis: *A Reinforcement Learning Framework for Simultaneous Chemical Process Flowsheet Generation, Design and Control* (thesis)
– Published two first-authored papers in high-impact journals: *AIChE* (paper) and *CACE* (paper)
– Presented research at multiple conferences: *AIChE 2024* (oral and poster presentations), *CSChE* (oral presentation), *DYCOPS* (oral presentation) and *IFAC* (poster presentation)

•Bachelor of Science (Chemical Engineering) *August 2018 - July 2022*
Universidad Iberoamericana (IBERO) Mexico City, Mexico

– Cumulative GPA: 9.6/10 - *Highest CGPA of the class*
– Developed a Python-based hybrid platform integrating ASPEN Plus for real-time optimization utilizing genetic algorithms to optimize a multi-objective design function of an Organic Rankine Cycle (Project's code)
– Synthesized silver nanoparticles using silver nitrate ($AgNO_3$) and *Sargassum* as a natural reducing agent
– Initiated and promoted the creation of *Voz de la Experiencia*, a talk series launched during the COVID-19 pandemic where chemical engineering faculty shared their professional experiences and career advice with students

Skills

Technical Skills:

Programming: Advanced in Python (strong focus in Data Science, Machine Learning and Deep Learning), SQL, Power BI, and Microsoft Office Suite (Word, Excel and PowerPoint). Intermediate in MATLAB, HTML, CSS, and JavaScript. Experienced with RStudio and MiniTab for statistical analysis. Skilled in cloud platforms such as Microsoft Azure.

Engineering: Strong knowledge of process engineering with a focus on process simulation, optimization, and operations. Proficient in chemical process simulation software including ASPEN Plus and DWSIM. Experienced in chemical reaction engineering, process design, and applied chemistry principles for industrial applications

Soft Skills: Strong analytical thinking, problem-solving, clear communication, public speaking, adaptability, self-directed learning, and effective teamwork

Languages: Spanish (Native), Italian (Native), English (C2 – Cambridge Certification), German (C1 – Deutsches Sprachdiplom), French (B2 – DELF Certification)

Extracurricular and leadership experience

- **Teaching assistant** *June 2023 - April 2024*
  University of Waterloo Waterloo, Canada
  - Provided a welcoming environment for students, answering questions and facilitating open discussions to enhance their learning experience
  - Taught two courses: an introductory Python programming course and an advanced Aspen Plus course for final-year undergraduate students
  - Organized and supervised examinations, offering extra review sessions to clarify doubts and ensure students were well-prepared

- **Caritas Volunteer** *August 2022*
  Caritas Roma Rome, Italy
  - Served more than 300 meals to individuals experiencing homelessness
  - Organized supporting group talks during lunch to encourage fostering open communication and encouragement to strengthen community bonds and individual resilience