# Daniel Sbeiti

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## EDUCATION

**Princeton University** - *MFin, Master in Quantitative Finance (STEM degree)*      Aug 2024 - May 2025
- Applying **quantitative methods** and models to **financial trading strategies**, including reinforcement learning, machine and deep learning, autoregressive and factor models.
- Relevant courses: Statistical Analysis of Financial Data, Computational Finance in C++, Financial Risk Management, Stochastic Calculus and Asset Pricing, Financial Econometrics, Large Language Models

**Ecole Polytechnique** - *'Grandes Ecoles' BSc-MSc, Mathematics, Applied Mathematics, GPA:* 3.9/4.0      Aug 2021 - May 2024
- Ranked 69 out of 20,000 students on France national entrance exams in Physics and Math (CPGE Ginette)
- Relevant Courses: Stochastic Calculus in Finance, Machine and Deep Learning, Optimal Control, Monte Carlo Simulations, Abstract Algebra, Time Series Analysis, Probability and Statistical Theory, Real Analaysis

## WORK EXPERIENCE

**EDF Lab Pacific Asia - Quantitative Researcher Intern**      Mar - Aug 2024
*Energy Markets Division*      *Singapore, Singapore*
- Created and priced a market of contracts covering a regulation induced renewable energy demand with an optimal allocation of electricity production and storage.
- Developed a deep learning algorithm to solve non-linear stochastic optimization problems with storage control for commodity trading strategies (PyTorch), under supervision of Pr. Nizar Touzi (NYU chair of Finance and Risk Dpt).

**Bain & Company - Associate Consultant Intern**      Jun - Aug 2022
*Data Science Analyst*      *Paris, France*
- Priced products for a Mobility Payment company under LBO by conducting quantitative analyses of US market macro-databases on user click, competition price and city activity. Identified 35% additional sales revenue potential.

## QUANTITATIVE RESEARCH PROJECTS

**Interactive AI Resume Chatbot**      Jan 2025
*Personal project, Web*      *Princeton, US*
- Built an Interactive Resume Chatbot running with local Mistral-small in a Retrieval-Augmented Generation structure, trained on my project reports and extensive CV. Also coded its web interface (HTML/CSS). Try it out (danielsbeiticv.com) !

**Extractive Text Summarization in Natural Language Processing (NLP)**      Sep - Dec 2023
*Ecole Polytechnique Computer Science Dpt.*      *Paris, France*
- Built a Extractive Summarization Language Model based on dialogues and discourse graphs

**American Options Pricing and Optimal Stopping**      Sep - Dec 2023
*Ecole Polytechnique Applied Mathematics Dpt.*      *Paris, France*
- Priced American option baskets implementing Longstaff-Schwarz algorithms to determine optimal exercise dates
- Upgraded the pricing algorithm using Gaussian Process Regressions supervised learning and low discrepency series

**Gaz Leak Detection with Image Processing in Deep Learning**      Nov 2023
*QuantumBlack AI Hackathon, finalist out of 10 teams*      *Paris, France*
- Chaired a 4-student team in developing the Hackathon's best performing methane gaz leak detection and localization model from sattelite imaging, achieving 92% accuracy using CNN structures.

**Stochastic Modelling in Population Dynamics**      May 2022 - May 2023
*Ecole Polytechnique Applied Mathematics Dpt.*      *Paris, France*
- Designed a stochastic model solving stationary solutions to Sheguesada, Kawazaki and Teramoto's non-linear differential system (SKT model) to describe two-species population dynamics with birth-death events and local segregation

## LEADERSHIP EXPERIENCE

**Swimming Team President and Student Representative**      Apr 2022 - Apr 2024
- Represented Polytechnique's swimming team before the university's directing board
- Organized numerous social and academic events for 30 teammates and 40 arriving students over 2 years

**Versailles Armored Intervention Unit Trainee**      Sep 2021 - Mar 2022
- Commanded a four-person vehicle in protection missions for Bank of France money convoys and President E. Macron

## SKILLS & INTERESTS

**Languages**: English – French - Arabic (fluent), Spanish - German (intermediate), Mandarin Chinese (beginner)
**Technologies**: Python (Pandas, Scikit-learn, PyTorch/TF, Networkx, HuggingFace/LangChain), HTML/CSS, Java, C++
**Passions**: Skydiving, Swimming, Speech contests, LLMs