MERLIN BAUDOIN

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EDUCATION

Stanford University – M.S. in Computational and Mathematical Engineering Stanford, USA

Mathematical and Computational Finance (MCF) track *September 2026 – June 2028*

- Planned coursework: Statistical Learning, Numerical Linear Algebra, Optimization, Stochastic Calculus, Theoretical Statistics

École Polytechnique – B.S. in Mathematics and Economics Paris, France

Double Major in Mathematics and Economics, Minor in Computer Science *September 2023 – June 2026*

- **GPA: 3.92/4.00**
- Relevant courses: Measure Theory, Markov Chains, Probability & Statistics, Machine Learning, Econometrics
- **Exchange Semester at UC Berkeley (GPA: 4.00/4.00)**
  - Courses: Mathematical Methods for Optimization, Financial Economics, International Trade

PROFESSIONAL EXPERIENCE

Quantitative Trading Intern - Natixis CIB June 2025 – August 2025

Quantitative Investment Strategies (QIS) *Paris, France*

- Researched and back-tested daily-rebalanced cross-asset volatility-target strategies with a 5% annualized volatility target
- Designed new volatility-targeting mechanisms, improving risk-adjusted returns vs. the existing methodology over a 20-year back-test
- Built a Python back-testing engine adopted as an internal desk tool for evaluating algorithmic strategies

RESEARCH EXPERIENCE

Research Project in Game Theory - CREST [Slides] January 2026 – March 2026

Bachelor Thesis supervised by Prof. Matias Nunez

- Modeled a continuous two-phase shortlisting game with inequality-averse agents
- Derived closed-form equilibrium strategies as functions of players' inequality aversion parameters
- Designed and led a live experiment with 15+ participants to test my theoretical findings

PROJECTS

Parallelization of agent-based financial model in C++ [Slides] April 2026 – June 2026

University Project for a Parallel Programming class

- Implemented and parallelized an agent-based model for market price dynamics based on a first-come-first-served order book
- Batched agents into sub-order books matched independently in parallel, then pooled remaining orders into a common book for final clearing
- Achieved a 1.92× speed-up on 4 cores with 500,000 agents

Research Project in Econometrics [Report] August 2025 – December 2025

Study of the effect of the ban of e-scooter sharing apps on road accidents

- Implemented a Difference-in-Differences approach to estimate the impact of Paris's ban of scooter sharing apps on road accidents
- Found no statistical evidence that banning e-scooters improved road safety in Paris

Machine Learning with Graphs for Combinatorial Optimization [Slides] May 2025 – June 2025

Course Project for Machine Learning class

- Trained a Graph Neural Network with Imitation Learning to approximate minimal solutions for the NP-hard "Graph Burning Problem"
- Found minimal solutions on 22% of instances (vs. 0.3% for a greedy baseline), providing a fast heuristic

High-Performance Chess Engine in C++ December 2024 – January 2025

Programming project in C++

- Architected board representation and move generation, designed playing strategies using minimax algorithm, optimized computational costs through alpha-beta pruning
- Achieved level corresponding to **top 10%** worldwide ranking on Chess.com

LEADERSHIP

Mathematics Tutoring 2021 – 2023

High-School tutoring

- Tutored and coached two students in mathematics, improving grades significantly
- Structured lessons and exercise sessions, assigned tailored problem sets; provided coaching on stress management and exam performance

Volunteering Experiences 2021 – 2025

Charities: Benenova and Envoludia

- Completed 100+ hours of volunteering: cooking for the homeless, gardening in refugee shelters, assisting elderly people
- Coordinated an art exhibition at École Polytechnique to raise awareness for people living with cerebral palsy.

SKILLS & INTERESTS

Languages: French (Native), English (Fluent), Spanish (Intermediate B2), Italian (Beginner)
Technical Skills: Python, C++, C, R
Interests: Chess (self-taught, top 5% worldwide on Chess.com), Martial Arts, Climbing