

Tom Beaugé

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Education

EPFL - École Polytechnique Fédérale de Lausanne (Switzerland) Aug 2024 – Present
Bachelor of Science in Computer Science

European School of Luxembourg II, Mamer (Luxembourg) Sep 2017 – Jul 2024
European Baccalaureate (English Section)

Specializations: Advanced Mathematics, Economics, Computer Science, Physics, History

Distinction: Final Grade 87.67%, awarded First Prize in Economics

Work Experience

Intern, Cebi S.A., Luxembourg Nov 2022

- Deployed heat and humidity sensors across the manufacturing plant to support the company's transition to Industry 4.0.
- Integrated sensor data into the company's Internet of Things (IoT) infrastructure, enhancing real-time monitoring capabilities.
- Applied programming and CAD software skills to optimize sensor placement and data transmission efficiency.
- Analyzed collected data to identify trends and insights, and presented technical findings, contributing to process optimization and operational efficiency.

Intern, Natixis CIB (Trading Desk), Paris, France Jun 2022 – Jul 2022

- Gained exposure to financial markets, specifically bond trading and swap strategies, by working on a desk specializing in swaps for supranational institutions.
- Actively engaged with professionals involved in trading bonds, selling Forex derivatives, and syndication activities.
- Priced bonds using market data and financial models to support trading decisions and optimize deal execution.

Municipal Worker, Bertrange Commune, Luxembourg Summers 2022, 2023

- Maintained public green spaces by removing litter, clearing overgrown areas, and ensuring a clean, safe environment.
- Supported logistical operations by assisting in the setup of major town events and festivals.

Personal Projects

Option Pricing Models Exploration Jan 2025 – Present

- Developed and implemented single-period and multi-period binomial tree models for option pricing, focusing on no-arbitrage principles and risk-neutral valuation.
- Explored the Black-Scholes model, applying concepts from stochastic calculus and geometric Brownian motion to derive option prices in continuous-time frameworks.
- Analyzed model limitations, proposing extensions for American options, volatility structures, and dynamic hedging strategies.
- Authored a comprehensive technical report detailing the theoretical foundations, implementation, and performance analysis of the models.
- All code, documentation, and the report are available on my GitHub repository.

Automated Customer Service Bot Jan 2023

- Designed and developed an automated customer service bot in Python to manage and respond to emails in real-time.
- Integrated OpenAI's API for generating intelligent, context-aware responses based on customer queries.
- Utilized SMTP and IMAP protocols to handle email communication, including fetching unread emails and

sending automated replies.

Skills

Programming Languages: Java, C, Python, Arduino, basic HTML/CSS/JavaScript, LaTeX
Languages: French (Native), English (Bilingual), Spanish (B2)

Activities

Model European Parliament (MEP), Luxembourg Feb 2023

- Served as a Portuguese delegate in the Foreign Affairs Committee, advocating for cybersecurity reforms in EU legislation.

European Schools Sailing Cup, Croatia May 2022, 2023

- Captained my school's team in the European Schools Sailing Cup in Croatia for two consecutive years, participating in a week-long regatta.

Volunteer, Course Contre la Faim, Luxembourg May 2021

- Organized awareness campaigns and supported event logistics for a fundraising race against hunger.