

Dear Admissions,

I am writing to express my interest in the Master's program in Quantitative Finance at ETH Zürich. I am excited about the opportunity to further my education at one of the world's leading universities for Quantitative Finance, to learn from professors who are leaders in the field.

My strong academic performance during my mathematics undergraduate at the University of Bristol shows my dedication to complex problem-solving and ability to analyse data effectively with a second-year average of 80%. The mathematical focus from ETH Zürich's strength in mathematics will allow me to apply these skills to real-world problems. For example, the vast use of Brownian motion in stock markets using probability theory like in the Black-Scholes Option Pricing Model I am studying this term. Achieving 88% in Statistics 2 has given me a solid foundation for the theory behind understanding and quantifying financial risks. Theory I would love to get the chance to learn more about at ETH Zürich.

ETH Zürich is so renowned for its research; the Master thesis is a fantastic chance to write a theory paper on a specialised topic in Financial Mathematics with globally renowned scholars. During university I have written multiple projects in LaTeX, including a project on machine learning, working effectively with other students in interdisciplinary teams.

In my Financial Mathematics module at undergraduate level, I will be studying theory like Stochastic integration and Stochastic processes adapted to Brownian motion. Having read some of the applications in risk measurement, I have found the application of mathematics fascinating. For instance, how the Stochastic differential equation for the asset value can be integrated using Itô calculus to determine the distribution of the asset value at future points in time, accounting for the randomness in the asset value's evolution. Courses such as 'Brownian Motion and Stochastic Calculus' and 'Topics of Applied Risk Management' are perfectly aligned with my academic background and my desire to apply mathematical models to financial challenges due to the structure of the course.

I have been self-teaching Time Series Analysis during my studies using books like 'Time Series Analysis' by James D. Hamilton to see intricate uses of ordinary differential equations and statistical methods like Bayesian analysis in finance. For example, stress testing to simulate economic scenarios to see how they affect their portfolios by developing time series models to understand the normal behaviour of the stock prices and the correlations with market indices.

Thank you for considering my application. I am thrilled about the opportunity to join the Master's program in Quantitative Finance to learn from your valuable professors and work with other highly motivated students.

Sincerely,

Natalia Kaye