I am currently enrolled in Master of Science in Finance at University of Trento. As my resume show my areas of interest is about Quantitative Finance.

During the first year of my Masters, I had the opportunity to get introduced to following subject:

* **Stochastic Calculus,** where I gained the knowledge necessary to comprehend the Black and Sholes model through all of its derivations and subsequent applications.
* **Financial Mathematics** was an introductory course in order to get prepared to the future topics. The course explains optimization process, linear algebra and applications.
* **Econometrics**, with an emphasis on time series analysis and the OLS estimator.

In the OLS section, we learn how to comprehend the OLS estimator's derivation and issues like heteroscedasticity and autocorrelation. Time series analysis was used to demonstrate how the ARIMA modeling functions works, with a focus on the ARCH and GARCH models and its various extensions, such as the E-GARCH, T-GARCH, and A-GARCH. I go into further detail on multivariate analysis after this lecture.

Many more intriguing subjects came up throughout the last year, especially in the first semester.

The subjects that I am currently working on are:

* **Risk management** that covers the fundamentals of the risk model.

Starting with market risk, we have seen several approaches to estimate VaR, including the normal distribution approach, historical simulation, Monte Carlo approach, and the relative back testing methods, such as the binomial, traffic light, and so on. We also discuss expected shortfall during class.

In the section on credit risk, methods to calculate the likelihood of default have included discriminant analysis, Probit and Logit, the Merton Model, and the Gordy Model.

The operational and reputational risk are both handled very carefully by us.

This course gives us the chance to create a project in the risk industry of our choice. My chosen area of expertise has emerged. It is about Market Risk: I tried to implement Extreme Value Theory in order to evaluate the Covid 19 crisis in the oil sector. (Available on GitHub).

* **Derivatives and Investment Analysis** includes contemporary portfolio theory subjects that I am very interested in. This course covers the fundamentals of financial instruments, the CAPM model with additional applications and enhancements, the APT (Arbitrage Pricing Theory) model, the Black-Litterman portfolio model, interest derivatives, reverse floaters, and portfolio selection.
* **Macroeconomics** allows me to have a thorough knowledge of the key theories that dominate modern economic thought.

The basic model of general dynamic equilibrium is introduced in the first section. The full forms of the Real Business Cycle Model (RBC) and the New Keynesian Model of Dynamic Stochastic General Equilibrium were then developed (DSGE)

In the second half, we will go over particular aspects of this model such as money, consumption and investment, labor market imperfections, and climate change.

In the last section, we will practice using econometric tools such as cointegration, Vector Autoregression Model (VAR), and structural vector autoregression (SVAR).

All of the courses were created using programs such as MATLAB for the majority of the topic, followed by R. Dynare is a MATLAB tool that allows you to perform numerical macroeconomic analysis. I am now working on GitHub to build further models of quant trading, market risk, and portfolio analysis, and I plan to incorporate other programming languages such as Python.