

Davide Marchini

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Born in Fidenza (Italy) on October 7th, 1994: Italian citizen, resident in the United Kingdom

Summary

Quantitative researcher professional with focus on Machine Learning, systematic investing and α -design. Experienced in macroeconomic dynamics of emerging and frontier markets. Research interests at the intersection of memory augmented neural architectures, self-learning algorithms and time series modelling.

Experience

Systematic Hedge Fund (undisclosed)

London, United Kingdom

Researcher

09/2019 - present

Intern (Zurich, Switzerland)

02/2019 - 05/2019

Research, development and implementation of systematic trading strategies on futures and cash equities.

Vontobel Asset Management

Zurich, Switzerland

Portfolio and Risk Analyst

12/2017 - 01/2019

Part-time position (working student 40-60%) in the Portfolio and Risk Analytics Team. Responsibilities over risk analysis, process automation and data reconciliation. Development and maintenance of tools in R (Sweave, caret, ggplot2), SQL, Excel VBA, Bloomberg and Morningstar.

University of Zurich - Department of Banking and Finance

Zurich, Switzerland

(Co-) Portfolio Manager, AuM €2Mn

02/2017 - 05/2018

Member of the Macro Group in the Portfolio Management Program (PMP), an academic collaboration between University of Zurich, ZZ Vermögensberatung (Schweiz) AG and P&K Pühringer Gemeinnützigen Stiftung. Management of an Emerging and Frontier Markets portfolio focused on Fixed Income and FX with responsibilities over market research, model development, trading and periodic presentations.

Education

ETH Zurich and University of Zurich

Zurich, Switzerland

Master of Science in Quantitative Finance, CGPA: 5.6/6.0

2016 - 2019

M.Sc. Thesis: "Consistent Scenario Generation of Financial Time Series" - Supervisor: Prof. Dr. Erich Walter Farkas

Relevant modules: Financial Engineering, Monte Carlo and FEM for Derivatives Pricing, Stochastic Calculus, Computational Finance, Asset Management, Portfolio Management Program, Quantitative Risk Management, Machine and Deep Learning.

Associations: Zurich Quantitative Finance Alumni (ZQFA)

Grants: LGT Capital Partners Scholarship (Fr.1500)

Politecnico di Milano

Milan, Italy

Bachelor of Science in Mathematical Engineering

2013 - 2016

Exchange semester (09/2015 - 01/2016): Universidad Autonoma de Madrid (UAM) (Real and Functional Analysis, Operations Research)

B.Sc. Thesis: "A mathematical model for crime diffusion" - Supervisor: Prof. Maurizio Verri

Relevant modules: Mathematical Analysis and PDEs, Numerical Analysis and Computer Science, Probability Theory, Statistical Inference.

Associations: Associazione Ingegneri Matematici (AIM)

Grants: INVALSI 2013 (€500), Erasmus+ 2015 (€2500)

Relevant Projects

Independent Research

Development of algorithmic investment strategies

06/2018 - present

Research on Memory Augmented Neural Architectures, Self-Learning Algorithms, Adversarial Inputs, Generative Models, (Differentiable) Performance Metrics. Implementation of an advanced backtesting engine (order book reconstruction, simulation of multi-agent and multi-asset markets) and design of proprietary libraries for performance and risk analytics, transaction cost analysis and visualization.

Percentile Forecasting and Portfolio Optimization

Computational Economics and Finance, Grade: 6.0/6.0

05/2017 - 06/2017

Forecast of positive return probabilities for a pool of 300 assets based on a GARCH(1,1) model. Application to various asset allocation strategies and introduction of a new method to incorporate predicted probabilities in a Black-Litterman setting. Code in R and Matlab.

Machine Learning Techniques applied to Foreign Exchange Instruments

Portfolio Management Theory 2, Grade: 6.0/6.0

02/2017 - 05/2017

Implementation of Support Vector Machines and Extreme Gradient Boosting algorithms to predict FX Futures returns. Achieved *out of sample* backtest results of 18% annualized returns and 1.70 Sharpe Ratio. Code in R, Matlab, VBA and Python.

Optimal Shrinkage of the Covariance Matrix

Asset Management: Applied Portfolio Theory, Grade 5.75/6.0

03/2017 - 04/2017

Implementation of two types of optimal shrinkage for the covariance matrix of returns. Backtest the impact of the shrinkage on several quantitative portfolio strategies involving the covariance matrix. Code in Matlab.

Interests and Skills

Languages: Italian (native), English and Spanish (fluent), French (conversational).

Research interests: Memory Augmented Neural Architectures, Self-Learning Algorithms, Time Series Modelling.

Programming proficiency: Python (pandas, pytorch, sklearn), R, Matlab, C, SQL, MS Office (incl. Excel VBA), \LaTeX .

Certificates: Bloomberg Markets Concepts (BMC) for Bloomberg Terminal.

High School: Math Olympiad; Summer Schools at Ducati Motors, SNS Pisa, University of Parma, Bocconi University.

Soft skills: Capable team player, trained to work under pressure and deadlines, precise, detail observer, *fast learner*.

Further details and references available upon request.