

Emanuele Guidotti

PHD STUDENT IN FINANCE · PARTNER AT ALGO FINANCE SAGL

Switzerland

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Research interests: empirical asset pricing, market microstructure, interdisciplinary data science and AI.

Education

CURRENT

University of Neuchâtel

Neuchâtel, Switzerland

PHD IN FINANCE - EMPIRICAL ASSET PRICING - SUPERVISOR: T.A. KROENCKE

Mar. 2019 - Jun 2023 (expected)

- My thesis consists of three papers in empirical asset pricing and market microstructure. The thesis investigates how microstructure variables affect asset prices. In the first paper, I develop an efficient estimator of the bid-ask spread from open, high, low, and close prices. The second paper estimates bid-ask spreads for the U.S. stock market since 1926 and it studies the role of the spread in the cross-section of stock returns. In the third paper, I propose a theoretical model of the limit order book and empirically test its implications in the price formation process.

PREVIOUS

University of Milan

Milan, Italy

MSC IN ECONOMICS AND FINANCE - QUANTITATIVE FINANCE - FINAL GRADE: 110/110 CUM LAUDE - SUPERVISOR: S.M. IACUS

2015 - 2017

- Thesis: "yuimaGUI: an Interactive Platform for Computational Finance". Favourite courses: "Numerical and Statistical Methods for Finance", "Databases", "Data Models and DBMS of New Generation", "Data Mining and Computational Statistics".

University of Milan

Milan, Italy

BSC IN PHYSICS - GENERAL PHYSICS - FINAL GRADE: 110/110 CUM LAUDE - SUPERVISOR: S.M. IACUS AND A. VICINI

2012 - 2015

- Thesis: "Option Pricing: Black-Scholes and Lévy dynamics". Favourite courses: "Computational Methods for Physics", "Numerical Treatment of Experimental Data", "General Relativity", "Quantum Mechanics", "Electromagnetism", "Calculus I", "Calculus II", "Calculus III".

High School Luigi Cremona

Milan, Italy

HIGH SCHOOL DIPLOMA OF SCIENCE - FINAL GRADE: 100/100

2007 - 2012

- Thesis: "The Fibonacci Sequence and the Golden Ratio".

Experience

CURRENT

Partner - Algo Finance Sagl

Lugano, Switzerland

SOFTWARE HOUSE START-UP DEVELOPING FINANCIAL ALGORITHMS FOR THE ASSET MANAGEMENT INDUSTRY

2018 - Now

- Managing the IT infrastructure, data acquisition, and algorithmic portfolio generation.

Member - The YUIMA Project

Tokyo, Japan

INTERNATIONAL ACADEMIC RESEARCH TEAM DIRECTED BY N. YOSHIDA

2017 - Now

- Academic research in Computational Statistics supported by the Japan Science and Technology Agency CREST.

PREVIOUS

Visiting Scholar - HEC Montréal

Montréal, Canada

DEPARTMENT OF DECISION SCIENCES

May 2022

- Working with D. Ardia

Visiting Scholar - University of Tokyo

Tokyo, Japan

GRADUATE SCHOOL OF MATHEMATICAL SCIENCES

Jan 2017, May, Nov and Dec 2018

- Working with N. Yoshida and S.M. Iacus

Data Scientist - Voices from The Blogs

Milan, Italy

START-UP DEALING WITH BIG DATA ANALYSIS, DEEP LEARNING, MACHINE LEARNING AND SENTIMENT ANALYSIS

2017 - 2018

- Collaborating on a Data Science project for a confidential client company.

Working papers

Efficient Estimation of Bid-Ask Spreads from Open, High, Low, and Close Prices

D.ARDIA, E. GUIDOTTI, T. KROENCKE

Available at SSRN

Text Classification with Born's Rule

E. GUIDOTTI, A. FERRARA

Under review

calculus: High Dimensional Numerical and Symbolic Calculus in R

E. GUIDOTTI

Forthcoming in Journal of Statistical Software

Published papers

A worldwide epidemiological database for COVID-19 at fine-grained spatial resolution

E. GUIDOTTI

2022

Scientific Data, vol. 9(1), pag. 1-7. Nature Publishing Group

COVID-19 Data Hub

E. GUIDOTTI, D. ARDIA

2020

Journal of Open Source Software, vol. 5(51), pag. 2376

Are official confirmed cases and fatalities counts good enough to study the COVID-19 pandemic dynamics? A critical assessment through the case of Italy

K. BARTOSZEK, E. GUIDOTTI, S. IACUS, M. OKRÓJ

2020

Nonlinear Dynamics, vol. 101(3), pag. 1951-1979. Springer

Talks

CONFERENCES

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| Oct 2022 | Annual Meetings of the Financial Management Association , <i>Efficient Estimation of Bid-Ask Spreads from Open, High, Low, and Close Prices.</i> | Atlanta, Georgia, United States |
| Aug 2022 | Annual Meetings of the European Finance Association , <i>Efficient Estimation of Bid-Ask Spreads from Open, High, Low, and Close Prices.</i> | Barcelona, Spain |
| Jun 2022 | International Conference on Quantitative Finance and Financial Econometrics , <i>Efficient Estimation of Bid-Ask Spreads from Open, High, Low, and Close Prices.</i> | Marseille, France |
| Dec 2021 | International Conference on Computational and Methodological Statistics , <i>Asymptotic expansion formulas for diffusion processes based on the perturbation method.</i> | London, England |
| Nov 2021 | Annual Financial Market Liquidity Conference , <i>Efficient Estimation of Bid-Ask Spreads from Open, High, Low, and Close Prices.</i> | Budapest, Hungary |
| Oct 2021 | Annual Meeting of the German Finance Association , <i>Efficient Estimation of Bid-Ask Spreads from Open, High, Low, and Close Prices.</i> | Innsbruck, Austria |
| Oct 2021 | International Risk Management Conference , <i>Efficient Estimation of Bid-Ask Spreads from Open, High, Low, and Close Prices.</i> | Cagliari, Italy |
| Aug 2021 | IUPAP Conference in Computational Physics , <i>An explainable probabilistic algorithm for categorical data inspired to quantum physics.</i> | Coventry, England |
| Dec 2020 | International Conference on Computational and Methodological Statistics , <i>Asymptotic expansion formulas for diffusion processes based on the perturbation method.</i> | London, England |
| Jun 2020 | European R Users Meeting , <i>COVID-19 Data Hub</i> (invited speaker, winner of the CovidR contest). | Milano, Italy |
| Dec 2019 | International Conference on Computational and Methodological Statistics , <i>Towards Coding of the Asymptotic Expansion Formulas in YUIMA.</i> | London, England |
| Jul 2019 | European Meeting of Statisticians , <i>Towards Coding of the Asymptotic Expansion Formulas in YUIMA.</i> | Palermo, Italy |
| Dec 2017 | International Conference on Computational and Methodological Statistics , <i>The Yuima framework for simulation and inference of stochastic processes and its GUI.</i> | London, England |
| Sep 2017 | Annual Meeting of the Association for Mathematics Applied to Social & Economic Sciences , <i>yuimaGUI: a Graphical User Interface for the yuima package.</i> | Cagliari, Italy |
| May 2017 | R/Finance Conference , <i>yuimaGUI: interactive platform for computational finance.</i> | Chicago, USA |
| Aug 2016 | International Conference on Computational Statistics , <i>yuimaGUI: a Graphical User Interface for computational finance based on the yuima R package.</i> | Oviedo, Spain |

SEMINARS

May 2022	HEC Montréal, Department of Finance , <i>Efficient Estimation of Bid-Ask Spreads from Open, High, Low, and Close Prices.</i>	Montréal, Canada
Jan 2021	Quantact , <i>Asymptotic expansion formulas for diffusion processes based on the perturbation method.</i>	Montréal, Canada
May 2018	The University of Tokyo, Graduate School of Mathematical Sciences , <i>Latest development in the R-package yuimaGUI.</i>	Tokyo, Japan
Jan 2017	The University of Tokyo, Graduate School of Mathematical Sciences , <i>yuimaGUI: a Graphical User Interface for the yuima package.</i>	Tokyo, Japan

PANEL DISCUSSIONS

Dec 2020	Next Einstein Forum Global Gathering , <i>The role of data governance in the management of COVID-19 spread.</i>	Nairobi, Kenya
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LECTURES

Jul 2019	YUIMA Summer School on Computational and Statistical Methods for Stochastic Process , I lectured at this 4 days course that introduces researchers, PhD students and practitioners to several aspects of modern numerical and statistical analysis of time series through the R language and in particular the YUIMA package.	Brixen, Italy
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Teaching

I am teaching assistant for the courses: "Asset Pricing", "Portfolio Management", "Quantitative Methods for Finance", and "Research in Financial Analysis" at the Master in Finance of the University of Neuchâtel, Switzerland. I also gave the following courses and laboratories as an external lecturer at the Master in Data Science for Economics of the University of Milan, Italy.

Hackathon: Data Acquisition, Management, and Visualization

Milan, Italy

MASTER IN DATA SCIENCE FOR ECONOMICS, UNIVERSITY OF MILAN

2022

- Lecturer for this 2-day, full-time, laboratory where I illustrated the case study of COVID-19 Data Hub.

Hackathon: Data Acquisition, Management, and Visualization

Milan, Italy

MASTER IN DATA SCIENCE FOR ECONOMICS, UNIVERSITY OF MILAN

2021

- Lecturer for this 2-day, full-time, laboratory where I illustrated the case study of COVID-19 Data Hub.

Text Mining and Sentiment Analysis

Milan, Italy

MASTER IN DATA SCIENCE FOR ECONOMICS, UNIVERSITY OF MILAN

2019 - 2020

- Lecturer for this elective course. I held the the Text Mining module.

Coding for Data Science and Data Management

Milan, Italy

MASTER IN DATA SCIENCE FOR ECONOMICS, UNIVERSITY OF MILAN

2019 - 2020

- Lecturer for this compulsory course. I held the R module.

Research Grants

2022	Fonds des donations de l'Université de Neuchâtel , Awarded to support my research visit at HEC Montréal.	University of Neuchâtel
2021	Google Cloud Research Credits , Awarded to enable performance tests on GPU for the paper Text Classification with Born's Rule.	Google Cloud
2020	R Consortium ISC Grant Program , Awarded to support the maintainance of COVID-19 Data Hub.	R Consortium
2020	Institute for Data Valorization , Awarded to support the development of COVID-19 Data Hub.	IVADO

Skills

Languages	MOTHER TONGUE: Italian · FLUENT: English (level C1)
Programming	MAIN: R, Python, SQL · OTHER: C++, SAS, PHP, HTML, XML, CSS, Javascript, jQuery, AJAX, LaTeX
Cloud Computing	Google Cloud Platform, WRDS High Performance Computing Cluster
Financial Databases	CRSP, COMPUSTAT, TAQ