EDIT RROJI
Curriculum Vitae

PERSONAL DETAILS

Address: via Bicocca degli Arcimboldi 8,Milano Italy
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Date of Birth: 24/08/1987 Shkoder (Albania)

CURRENT POSITION

November 1, 2019 - present *Assistant Professor* (**RTD-B Tenured track**), SECS-S/06-Mathematical methods of economics, finance and actuarial sciences. Department of Statistics and Quantitative Methods, University of Milano-Bicocca

October 8, 2018 – October 8, 2024 *National Scientific Habilitation* (**ASN**) for the position of **Associate Professor**, SECS-S/06-Mathematical methods of economics, finance and actuarial sciences.

PREVIOUS POSITIONS

September 17, 2018 – October 31, 2019 *Assistant Professor* (**RTD-A**),
SECS-S/06 Department of Mathematics, Politecnico di Milano.

January 2017 - September 16, 2018 *Postdoctoral researcher*
Research project: "New statistical and mathematical tools for finance"
Supervisor: Prof. Fabio Bellini, University of Milano-Bicocca

June 2015 - December 2016 *Postdoctoral researcher*
Research project: "Quantitative analysis and assessment of risks in finance and insurance"
Supervisor: Prof. Ermanno Pitacco, University of Trieste

OTHER EXPERIENCES

September 2014 - March 2015 Research *Consultant* for Symmys Llc
December 2012 - July 2013 *Internship* at StatPro Italia S.r.l

EDUCATION

December 2013 - PhD in Applied Math for Finance at the University of Milano-Bicocca
Title of thesis: "*Risk Decomposition and semi heavy tailed distributions*"

September 2010 - Master Degree in Economics and Finance at the University of Milano-Bicocca
Title of thesis: "*Option pricing with mixtures of normals*" 110/110 cum laude

September 2008 – Bachelor Degree in Banking and Insurance at the University of Milano-Bicocca
Title of thesis: "*Credit Rationing in Banks*" 110/110 cum laude

SCHOLARSHIPS AND AWARDS

October 2018 "Premio giovani talenti 2018" (*Euro 1000* ranked in the top three) assigned to Postdoctoral Researchers at the University of Milano-Bicocca. Evaluation performed by *Accademia Nazionale dei Lincei.*

April 2014 Winner of the "MaF 2014 Award for Young researchers" for the paper *Risk measurement using the Mixed Tempered Stable distribution.*

November 2010 – November 2013, scholarship for the Ph.D in "Matematica per l'Analisi dei Mercati Finanziari" University of Milano-Bicocca.

August 2012 Scuola Matematica Interuniversitaria's (SMI) scholarship from Consorzio per l'Alta Formazione in Matematica (CIAFM) and the Ministery of University and Research.

January 2009 – September 2010 Scholarship for the best foreign student at University of Milano-Bicocca during the post-graduate studies.

GRANTS

Principal Investigator for the **GNAMPA 2018** research project "*Infinitely divisible distributions for portfolio allocation*" funded by INDAM (Istituto Nazionale di Alta Matematica) Members: Hitaj A., Macci C. and Rosazza Gianin E. *Euro 3.000*

Member of the **project. n. 35364** "*Advanced Methods for Portfolio Optimization*" of the "**MIUR-DAAD Joint Mobility Program**" P.I. Mercuri L., members: Paterlini S. and Margherita G. (German unit), Hitaj A. and Rroji E. (Italian unit) *Euro 10.000*

VISITING PERIOD

Research period at **ESADE Business School**, Barcelona (Spain) May 21st-May 25th, 2018. Invited by Dr. Carlo Sala.

RESEARCH INTEREST

Infinitely divisible distributions; Numerical methods for Finance and Insurance; Volatility measures.

ATTENDED COURSES

Bank of Italy Rome, December 13-14 (2018)
"Big Data Econometrics with Applications"

Vienna International Summer School Austria, July 9-July 13 (2018)
"Machine Learning Methods and Data Analytics in Risk and Insurance"

Winter School, Ascona, Switzerland January 8-13 (2017)
"Perspectives for young researchers in actuarial mathematics"

Summer School in Economics and Finance Canazei, July 22-26 (2013)
"Quantitative Methods in Risk Management" Prof. Hubalek F.

SMI courses Perugia (Italy) July 29-August 31 (2012)
"SDEs" Prof. Baldi P. (grade B) "Mathematical Statistics" Prof. Rinott Y. (grade A+)

Summer School in Economics and Finance Canazei, July 16-20 (2012)
"Credit Risk-Main issues and derivative pricing" Professors: Schaefer S., Berardi A. and Plazzi A.

RESEARCH ACTIVITY

Articles in refereed journals:

[11] Hitaj A., Mercuri L. and Rroji E. (2019) "Lévy CARMA models for shocks in mortality" **Decisions in Economics and Finance** p. 1-23 doi: 10.1007/s10203-019-00248-9

[10] Hitaj A., Mercuri L. and Rroji E. (2019) "Sensitivity analysis of the Mixed Tempered Stable distribution with implications in portfolio optimization" **Computational Management Science** 16(1-2), p. 71-95

[9] Bellini F., Mercuri L. and Rroji E. (2018) "Implicit expectiles and measures of implied volatility" **Quantitative Finance** 18(11) p. 1851- 1864

[8] Mercuri, L. and Rroji E. (2018) "Option Pricing in an Exponential MixedTS Lèvy process" **Annals of Operations Research** 260 (1-2) p. 353-374

[7] Mercuri L. and Rroji E. (2018) "Risk Parity for Mixed Tempered Stable distributed sources of risk" **Annals of Operations Research** 260(1-2) p. 375-393

[6] Iacus S. M., Mercuri L. and Rroji E. (2018) "Discrete time approximation of a COGARCH(p, q) model and its estimation" **Journal of Time Series Analysis** 39(5) p.787-809

[5] Hitaj A., Hubalek F., Mercuri L. and Rroji E. (2018) "On properties of the MixedTS and its multivariate extension" **International Statistical Review** 86(3) p.512-540

[4] Iacus S. M., Mercuri L. and Rroji E. (2017) "COGARCH(p, q): Simulation and Inference with yuima Package" **Journal of Statistical Software** 80(4) p. 1-49

[3] Hitaj A., Mercuri L. and Rroji E. (2015) "Portfolio Selection with Independent Component Analysis" **Finance Research Letters** 15 p. 146–159

[2] Rroji E. and Mercuri L. (2015) "Mixed Tempered Stable distribution" **Quantitative Finance** 15 (9) p. 1559-1569

[1] Loregian A., Mercuri L. and Rroji E. (2012) "Approximation of the variance gamma model with a finite mixture of normals" **Statistics & Probability Letters** 82(2) p. 217-224.

Book chapters:

[3] Hitaj, A., Mercuri L. and Rroji E. "Some empirical evidence on the need of more advanced approaches in mortality modelling" accepted for publication in **Mathematical and Statistical Methods for Actuarial Sciences and Finance** Springer (2018)

[2] Hitaj, A., Mercuri L. and Rroji E. "VIX computation based on affine stochastic volatility models in discrete time." in **International Series in Operations Research and Management Science** Springer (2018)

[1] Mercuri L. and Rroji E. "Risk Measurement Using the Mixed Tempered Stable Distribution" in **Mathematical and Statistical Methods for Actuarial Sciences and Finance** Springer (2014)

Conference proceedings:
"On multivariate extensions of the mixed tempered stable distribution" Hitaj A., Hubalek F., Mercuri L. and Rroji E. (2016) **COMPSTAT 2016 22nd International Conference on Computational Statistics** ISBN 978-90-73592-36-0

PhD Thesis
"*Risk decomposition and semi-heavy tailed distributions*" available at https://boa.unimib.it/retrieve/handle/10281/49833/74516

Submitted papers
[3] "*Assessing longevity risk in a portfolio of life annuities*" Pitacco E. and Rroji E.

[2] "*On the dependence structure between S&P500, VIX and implicit Interexpectile Differences*" Bellini F., Mercuri L. and Rroji E.

[1] "*Lapse risk in life insurance*" Barucci E, Colozza T., Marazzina D. and Rroji E.

Working papers
[4] "*Implicit quantiles and implicit expectiles*" Bellini F., Rroji E. and Sala C,

[3] "*Measuring Risk with COGARCH(p, q) models*" Bianchi F. , Mercuri L. and Rroji E.

[2] "*Finite mixture approximation of CARMA(p,q) models*" Mercuri L., Perchiazzo A. and Rroji E.

[1] "*Multivariate models for financial applications*" Bianchi M., Hitaj A., Mercuri L., Rroji E. and Tassinari

CONFERENCES AND SEMINARS

Amases XLIII-th ed September 9-11, **2019 Perugia, Italy** (co-organizer of the session)
"Measuring risk with COGARCH(p,q) models"

IME Conference July 10-12, **2019 Munich, Germany**
"Lapse risk in life insurance"

Quantitative Finance Workshop January **2019 Zurich, Switzerland.**
"Information content of implicit quantile and implicit expectile curves"

Amases XLII-th ed. September **2018 Napoli, Italy** (co-organizer of the session)
"Multivariate modeling for financial applications"

MaF conference April **2018** (Invited) **Madrid, Spain**
"Some empirical evidence on the need of more advanced approaches in mortality modelling"

Quantitative Finance workshop January **2018 Rome**, **Italy**
"Copula-based study of the dependence structure between VIX and S&P 500"

ERCIM (CFE) conference December **2017 London, UK**
"Copula-based study of the dependence structure between VIX and S&P 500"

Department seminar, November **2017** (Invited) University of **Verona, Italy**
"An expectile-based measure of implied volatility"

Department seminar, September **2017** (Invited) University of **Pavia, Italy**
"An expectile-based measure of implied volatility"

Amases XLI-th ed. September **2017 Cagliari, Italy**
"An expectile-based measure of implied volatility"

IME Conference July **2017 Vienna, Austria**
"Dealing with mortality at highest age groups"

Computational Management Science conference June **2017** (Invited) **Bergamo, Italy**
"Portfolio Optimization using Multivariate Mixed Tempered Stable distribution"

Quantitative Finance workshop January **2017 Milan, Italy**
"Stochastic mortality modelling: some extensions based on Lévy CARMA models"

Workshop on Perspectives for young researchers in actuarial mathematics January **2017 Ascona, Switzerland**
"Assessing longevity risk in a portfolio of life annuities"

Department seminar, November **2016** (Invited) **Trieste, Italy**
"Assessing longevity risk in a portfolio of life annuities"

Department seminar, November **2016** University of **Pavia, Italy**
"Introduction to Monte Carlo methods for finance"

UNISActuarial School, October **2016 Salerno, Italy**
"Assessing longevity risk in a portfolio of life annuities"

Amases XL-th ed, September **2016 Catania, Italy**
"Assessing longevity risk in a portfolio of life annuities"

EUROWORKING GROUP 54-th meeting, December **2014 Milan, Italy**
"Portfolio Selection with ICA"

MAF Conference, April **2014 Salerno, Italy**
"Risk Measurement Using the Mixed Tempered Stable Distribution"

Amases XXXVII-th ed. September **2013 Stresa, Italy**
"Risk Decomposition in Multifactor models"

LaBeX-ReFi, June **2013 Paris, France**
"Constructing a class of stochastic models: empirical investigation using VIX data"

Amases XXXVI-th ed. September **2012 Vieste, Italy** "A new class of stochastic volatility models"

TEACHING – PhD Course

PhD in Mathematical Models and Methods in Engineering (June 13-July 1 2019) **Politecnico di Milano.**
"Machine Learning in Finance" (In collaboration with R. Baviera, D. Marazzina and M.Restelli)

TEACHING – UNDERGRADUATE AND POSTGRADUATE

Politecnico di Milano
Lecturer for the postgraduate course *Econometrics and Insurance* (2018-2019)

University of Milano-Bicocca
Adjunct Professor for the undergraduate course *Matematica generale* (2017-2018)
Teaching Assistant for the postgraduate course *Risk Measures* (2012- present)
Teaching Assistant for the postgraduate course *Actuarial Mathematics* (2017- 2018)
Teaching Assistant for the undergraduate course *Matematica Generale* (2014-2015)
Teaching Assistant for the postgraduate course *Advanced Derivatives* (2011-2012, 2012-2013 and 2013-2014)

University of Pavia
Adjunct Professor for the postgraduate course *Metodi matematici per le applicazioni aziendali* (2017-2018)
Matlab Laboratories for the postgraduate course *Applied Finance Lab* (2017-2018)

University of Milan
Adjunct Professor for the postgraduate course *Risk Assessment and Management* (2014-2015 and 2016-2017)

University of Trieste
Teaching Assistant for the undergraduate course *Matematica* (2015-2016 and 2016-2017)

OTHER ACTIVITIES

Organizer of the *POLIMI Lunch Seminars* for the accademic year 2018/19.

Member of the commission for the **selection** of postdoctoral researchers, at the Department of Mathematics, Politecnico di Milano:
"*Educazione Finanziaria in età scolare*" - November 2018
"*A financial supervision and technology compliance training programme* "- April 2019

Person in charge for the use of the **Bloomberg** terminal at the University of Milano-Bicocca November 2010 – September 2011.

Co-supervisor for master theses at Univ. of Milano-Bicocca, Univ.of Milan and Politecnico di Milano (2015-present).

Served as **a referee** for "Annals of Operations Research", "European Journal of Finance", "Insurance, Mathematics and Economics" and "Journal of Statistical Software".

MEMBERSHIP

June 2012 - present member of the **AMASES** (Association of Applied Math for Social and Economics Science) association.

January 2018 – present member of the National group for Mathematical Analysis, Probability and their Applications (**GNAMPA**) of the National institute of Mathematics (INdAM).

October 2018 - present member of **SIdE** (Italian Society of Econometricians).

October 2018 - present member of the **Nicola Liberati Quantitative Finance Lab** (*QFinLab*) at the Department of Mathematics at Politecnico di Milano.

LANGUAGES AND OTHER SKILLS

Fluent in English and basic knowledge of French.
Advanced user of Matlab, R, Microsoft Office and LaTeX.

Milano, 03/11/2019

Le dichiarazioni rese nel presente curriculum sono da riternersi rilasciate ai sensi degli artt. 46 e 47 del D. P.R. 445/2000.
Autorizzo il trattamento dei dati personali contenuti nel mio Curriculum Vitae in base all' articolo 13 del D.lgs. 196/2003.