Silvia Lavagnini

Ph.D. Candidate – Department of Mathematics, University of Oslo
Research Interests: Stochastic Analysis; Option Pricing; Polynomial Processes; Deep Learning
silval@math.uio.no Postboks 1053 Blindern, 0316 OSLO - Norway +47 46558292

Education and Academic Background

University of Verona .... Starting date: Aug 2021
Postdoc position at the Department of Economics
Project: Stochastic Methods and Deep Learning in Finance and Economics

University of Oslo .... Aug 2017 – Present
Ph.D. position at the Department of Mathematics
Thesis submitted – Defence estimated in June 2021
Title: Stochastic Modelling in Energy Markets – From the Spot Price to Derivative Contracts
Research Group: Risk and Stochastics
Supervisor: Fred Espen Benth (University of Oslo)
Four years scholarship in stochastic analysis for mathematical finance and energy markets, 25% spent at Statkraft Energy AS

University of California – Santa Barbara .... Sept 2019 – Dec 2019
Visiting researcher
Working with Asst. Prof. Nils Detering, Department of Statistics & Applied Probability

University of Verona .... Sept 2014 – March 2017
Master's Degree in Mathematics – 110/110 cum Laude
Thesis: *Stochastic models for wind energy markets*
Main subjects: Functional Analysis, Stochastic Differential Equations, Mathematical Finance, Statistics of Stochastic Processes, Numerical Methods for Mathematical Finance

University of Oslo .... Aug 2016 – Jan 2017
Erasmus+ Mobility Program
Working at the master thesis with Prof. Fred Espen Benth, Department of Mathematics

University of Verona .... Sept 2011 – July 2014
Bachelor's Degree in Applied Mathematics – 110/110 cum Laude
Thesis: *Calibration of Mathematical Models for Finance*
Main subjects: Mathematical Analysis, Numerical Methods, Financial Mathematics, Probability, Stochastic Systems

Institute G. Galilei Verona .... Sept 2006 – July 2011
Scientific High School
Scientific Experimentation Brocca (1992-2010)

Publications

Accuracy of Deep Learning in Calibrating HJM Forward Curves
Co-Author(s): Fred E. Benth, Nils Detering
Digital Finance (2021): 1-40

CARMA Approximations and Estimation
Frontiers in Applied Mathematics and Statistics, 6 (2020): 37

Stochastic Modeling of Wind Derivatives in Energy Markets
Co-Author(s): Fred E. Benth, Luca Di Persio
Risks, 6.2 (2018): 56

Pre-Prints

Pricing Asian Options with Correlators
Status: Submitted to International Journal of Theoretical and Applied Finance
arXiv:2104.11684 (2021)

Correlators of Polynomial Processes
Co-Author(s): Fred E. Benth
Status: Submitted to SIAM Journal on Financial Mathematics
arXiv:1906.11320 (2019)

Teaching and Work Experiences

University of Oslo .... Aug 2020 – Dec 2020
Tutor of *Introduction to Mathematical Finance and Investment Theory* (STK-MAT3700)
Practice exercises lessons (both frontal and recorded)

Statkraft Energy AS (Oslo) .... Jan 2018 – May 2019
Part-time position as Consultant
Modelling of energy related processes and risk analysis

University of Verona .... Mar 2016 – Sept 2016
Tutor of *Mathematics* for Physical Education
Frontal lessons on basic mathematics and examinations

University of Verona .... Oct 2015 – Feb 2016
Tutor of *Analysis I* for Applied Mathematics
Correction of weekly tasks and individual help

University of Verona .... Oct 2014 – Feb 2015
Tutor of *Financial Mathematics* for Applied Mathematics
Practice exercises lessons

Institute G. Galilei Verona .... Oct 2013 – Feb 2014
Internship in Scientific High School
Support, frontal lessons, preparation and correction of tests

Municipality of Zevio (Verona) 2012, 2013, 2014
Scrutineer
Municipal elections, Political elections, European elections

Conferences and Talks[1]

[1] The seminars given at the Department of Mathematics (University of Oslo) are not listed

Invited speaker .... Verona (Italy) – May 12, 2021
Modelling Risk in Energy Markets
Veronesi Tutti Math series – Alumni Matematica Verona (online)

Invited speaker .... Verona (Italy) – Jan 21, 2021
Accuracy of Deep Learning in Calibrating HJM Forward Curves
Young Researcher Seminars, Maths Applications & Models

Online seminar .... Oslo (Norway) – Nov 13, 2020
Our Experiences as PhDs
Welcome Meeting for New PhDs – Department of Mathematics, University of Oslo

Contributed talk .... Vienna (Austria) – Sept 7-11, 2020
Accuracy of Deep Learning in Calibrating HJM Forward Curves
Conference on High-Dimensional Stochastics (online)

Contributed talk .... Vienna (Austria) – Aug 31-Sept 4, 2020
Accuracy of Deep Learning in Calibrating HJM Forward Curves
13th European Summer School in Financial Mathematics (online)

Online seminar .... Oslo (Norway) – May 29, 2020
Accuracy of Deep Learning in Calibrating HJM Forward Curves
Spring with STORM – Online seminars

Invited speaker .... Santa Barbara (USA) – Oct 14, 2019
Correlators of Polynomial Processes
Center for Financial Mathematics and Actuarial Research, UCSB

CONTRIBUTED TALK .... PARIS (FRANCE) – JUNE 11-14, 2019
Correlators of Polynomial Processes
9th General AMaMeF Conference

POSTER SESSION .... CAMBRIDGE (UK) – MARCH 5, 2019
Stochastic Models for Wind Energy Markets
Supergen Energy Networks Hub Risk Day 2019

CONTRIBUTED TALK .... BERGEN (NORWAY) – SEPT 11-13, 2018
CARMA Approximations and Estimation
Norwegian Mathematicians National Meeting

POSTER SESSION .... VERONA (ITALY) – DEC 18-21, 2017
Stochastic Models for Wind Energy Markets
Verona-Paris Stochastic Modelling Semester (Opening Conference)

GRANTS

GRANT AWARD FOR INTERNATIONAL MOBILITY[2] .... 2019 – 2020
FROM: UiO:Energy (University of Oslo)
DESTINATION: University of Duisburg-Essen, Essen (Germany)
[2] Unfortunately not used due to travel limitations

KRISTINE BONNEVIE TRAVEL GRANT .... 2018 – 2019
FROM: Faculty of Mathematics and Natural Sciences (University of Oslo)
DESTINATION: University of California, Santa Barbara (CA)

ERASMUS+ MOBILITY GRANT .... 2016 – 2017
FROM: University of Verona
DESTINATION: University of Oslo

PROGRAMMING SKILLS

GOOD LEVEL Python/TensorFlow, Matlab, R, LaTeX

COMMUNICATION SKILLS

ITALIAN Native speaker
ENGLISH Good level
NORWEGIAN Basic level

REVIEWS

SPRINGER Decisions in Economics and Finance
Italian Economic Journal
Journal of Energy Systems

MDPI Risks
Designs

ADDITIONAL ACTIVITIES

ATHLETICS From 2002 to 2009: Libertas Lupatotina Association – San Giovanni Lupatoto (VR), with specialization in short distances

SCOUT From 2001 to 2015: Scout Group Zevio 1
From 2013 to 2015: scoutmaster