SÉBASTIEN BOSSU | sbossu@charlotte.edu | sbossu.com
UNC Charlotte Mathematics & Statistics Mbox#94 | 9201 University City Blvd. | Charlotte NC 28223

EDUCATION

2022	Université Paris-Saclay: Ph.D. in quantitative finance Thesis: "Static replication of European options and dynamic replication of correlation swaps". Advisors: Peter Carr, Stéphane Crépey, Andrew Papanicolaou. Committee: Stéphane Menozzi (Chair); Areski Cousin, Jean-Pierre Fouque, Antoon Pelsser (Readers); Bruno Dupire, Robert Jarrow, Adil Reghaï.
2011	Columbia University, New York: M.S. degree
2002	The University of Chicago: M.S. Financial Mathematics
2001	HEC Paris: Diplôme Grande École (M.S. in Management). Concentration in Finance.
1999	Sorbonne Université (fmr Paris-6): B.S. Applied Mathematics (concurrently with studies at HEC)
1995— —1997	Lycée Carnot, Paris: *Classe préparatoire* ECS: undergraduate honors coursework in mathematics and humanities
1995	Lycée Henri-IV, Paris: high school diploma. Concentration in Sciences.

ACADEMIC POSITIONS & TEACHING EXPERIENCE

2023—	UNC Charlotte, NC: Tenure-Track Assistant Professor of Mathematics and Statistics • MATH 6203 (Fa23, Sp24): "Stochastic Calculus for Finance", MATH 3122 (Fa23, Fa24): "Probability & Statistics I". • Co-advised Hoang-Dung Nguyen at Université Paris-Cité with Stéphane Crépey
2021— —2023	WPI Business School, Worcester MA: Visiting Professor of Finance • Graduate: FIN 500 (Sp22 & Fa22): "Financial Management" • Undergraduate: BUS 2070 (A21, D22 & D23): "Risk Analysis for Decision-Making" , FIN 1250 (B21 & A22): "Personal Finance" • Co-advised Hoang-Dung Nguyen and Nisrine Madhar at Université Paris-Cité with Stéphane Crépey • Created and animated an experimental, optional student investment club for my BUS 2070 students
2022— —2023	Boston University Questrom School of Business: Lecturer of Finance (part time) MF 772 "Credit Risk" (co-instructor)
2017— —2021	NYU Courant: Adjunct Professor of Mathematics in Finance MATH-GA.2801.001: "Advanced Topics in Equity Derivatives"
2017— —2019	Johns Hopkins Carey Business School, Baltimore: Lecturer of Finance (part time) BU.232.710: "Derivatives"
2014— —2016	Pace University Lubin School of Business, New York: Adjunct Associate Professor of Finance FIN 650: "Applied Analytical Methods in Finance", FIN 672: "Strategies in Investments, Options & Futures", FIN 356 "Options, Futures & Swaps"
2013	Fordham University, New York: Adjunct Instructor of Mathematics MATH 3009: "Mathematics of Finance"
2008—9	Columbia University: Research Fellow
2008	HEC Paris: Adjunct Lecturer of Finance
'98—'01	Université Paris-Cité (fmr Paris-7): Adjunct Lecturer of Finance
2000—1	Lycée Carnot, Paris: Oral Examiner, undergraduate honors mathematics
1997—8	Lycée Carnot, Paris: Adjunct Instructor, undergraduate computer programming

SELECTED INDUSTRY EXPERIENCE

2011— —2021	Principal, Ogee Group LLC (startup company), New York • Investment management: +60% gross return with focus on macro options and futures. Tail risk arbitrage & hedging. Volatility trading: short straddle, variance futures, VIX futures & options. Opportunistic: bond futures, oil and gold futures & options, stock futures, stocks. • Consulting: repriced 100+ exotic energy derivative on behalf of the California Office of Attorney General Kamala Harris. • Authorship: CBOE white paper; textbook; several online articles. • Research: option trading strategies, correlation modelling and pricing. • Technology: developed the first portion of electronic trading platform in C#; supervised website development; created productivity tools using graph theory in C#; created and maintained company mail server.
2005— —2008	Director, Commerzbank (fmr. Dresdner Kleinwort), London: Head of Equity Derivatives Structuring team (6 permanent members) • Product development: trade ideas / new product design on a weekly basis. • Indicative pricing of all equity exotic derivatives. My team handled over 2500 pricing requests per year. • Productivity tool development: automatic script generator, historical correlation and volatility, automatic backtesting, basket optimizer, intranet website. • Structured the first European Investment Bank Climate Awareness Bond. Issue size €600mn.
2003— —2005	Associate, J.P. Morgan, London: Equity Exotics & Hybrids Structurer Indicative pricing and product development: options on hedge fund indices, variance and correlation swaps, target redemption notes, synthetic portfolio insurance, reverse convertible notes.
2002	Research Analyst, JPMorganChase (fmr Bank One), Chicago
2002	Quantitative Analyst (part time), Torshen Capital, Chicago (fund of hedge funds)
2000	Junior Trader (intern), Goldman Sachs, Paris: repo trading desk
1999	Junior Consultant (intern), Murex, Paris (financial software company)
1998	Summer intern, France Télécom, Yvelines (historic telecom operator)

ACADEMIC ARTICLES & TEXTBOOKS

1. Bossu, Sébastien (Oct. 2024). "Tridiagonal and single-pair matrices and the inverse sum of two single-pair matrices". In: *Linear Algebra and its Applications* 699. Forthcoming, pp. 129–158.
2. Bossu, Sébastien, Stéphane Crépey, and Hoang Dong Nguyen (2024). *Spanning Multi-Asset Payoffs with ReLUs*. Status: revise & resubmit.
3. Bossu, Sébastien (2022). "Static Replication of European Multi-Asset Options with Homogeneous Payoff". In: *Applied Mathematical Finance* 28.5, pp. 381–394.
4. Bossu, Sébastien, Peter Carr, and Andrew Papanicolaou (2022). "Static replication of European standard dispersion options". In: *Quantitative Finance* 22.5. **Featured article**, pp. 799–811.
5. Bossu, Sébastien (2021). "La réplication statique des options européennes et la réplication dynamique des swaps de corrélation". PhD thesis. Université Paris-Saclay.
6. Bossu, Sébastien, Peter Carr, and Andrew Papanicolaou (2021). "A functional analysis approach to the static replication of European options". In: *Quantitative Finance* 21.4, pp. 637–655.
7. Bossu, Sébastien (2014a). *Advanced Equity Derivatives. Volatility & Correlation*. Foreword by Peter Carr. John Wiley & Sons.
8. Bossu, Sébastien and Philippe Henrotte (2012). *An Introduction to Equity Derivatives. Theory & Practice*. 2nd ed. Back cover endorsements by Emanuel Derman and Paul Wilmott. John Wiley & Sons.
9. Bossu, Sébastien (2010a). *Correlation Swaps*. In: *Encyclopaedia of Quantitative Finance*. Ed. by Rama Cont. John Wiley & Sons.

10. Bossu, Sébastien (2010b). *Put-Call Parity*. In: *Encyclopaedia of Quantitative Finance*. Ed. by Rama Cont. John Wiley & Sons.
11. Bossu, Sébastien (2001). *L'oral de mathématiques aux concours des écoles de commerce*. Collection of undergraduate honors math problems with full solutions. Ellipses.

SELECTED INDUSTRY PUBLICATIONS

1. Bossu, Sébastien (2024e). *Variance Futures Reborn*. White paper. Chicago Board Options Exchange.
2. Bossu, Sébastien (2016). *A primer on correlation trading via equity derivatives*. KNect365 Finance.
3. Bossu, Sébastien (2014b). *A simple option trading strategy that beats the S&P 500*. TheStreet. Reprinted on EQDerivatives.
4. Bossu, Sébastien (2007). *A New Approach For Modelling and Pricing Correlation Swaps*. Tech. rep. Dresdner Kleinwort.
5. Bossu, Sébastien (2006). "Introduction to Variance Swaps". In: *Wilmott Magazine*.
6. Bossu, Sébastien (2005). *Arbitrage pricing of equity correlation swaps*. Tech. rep. J.P. Morgan.
7. Bossu, Sébastien, Eva Strasser, and Régis Guichard (2005). *Just what you need to know about variance swaps*. Tech. rep. J.P. Morgan.
8. Bossu, Sébastien and Yi Gu (2004). *Fundamental relationship between an index's volatility and the correlation and average volatility of its components*. Tech. rep. J.P. Morgan.

SELECTED CONFERENCES, PRESENTATIONS, AND INVITED TALKS

1. Eastern Conference on Mathematical Finance, 2021 & 2024e: top regional academic conference (invitation-only)
2. SIAM Annual Meeting, 2021 & 2024: top international conference on applied mathematics
3. Probability Seminar, UNC Charlotte Department of Mathematics & Statistics, 2023 & 2024
4. Financial Mathematics Seminar, Princeton University, 2023
5. Colloquium, UNC Charlotte Department of Mathematics & Statistics, 2023
6. MIT Quant, Data & Ai Conference, 2022
7. QuantMinds (fmr Global Derivatives) conference series, 2006, 2007, 2011—2014, 2016, 2017, 2019—2023: leading academic-practitioner conference in quantitative finance with over 500 attendees
8. Peter Carr Brooklyn Quant Experience Lecture Series, NYU Tandon, 2022
9. Bachelier Finance Symposium 2020 (held online June 2022)
10. The Peter Carr Memorial Conference, NYU Tandon and Society of Quantitative Analysts, 2022. Link to YouTube recording.
11. Boston University research seminar, 2022
12. WPI Financial Mathematics seminar, 2021
13. Princeton Fintech and Quant Seminar Series, 2021
14. Society of Financial Econometrics Summer School 2021, Kellogg School of Management, Northwestern University (joint session with CBOE)
15. SIAM Conference on Financial Mathematics and Engineering, 2019 and 2021: top academic conference in financial mathematics
16. Credit Suisse Quant Seminar, 2020
17. Mathematical Finance Seminar, NYU Courant, 2020
18. Faculty Seminar, NYU Tandon, 2019

19. Financial Mathematics Seminar, Johns Hopkins Whiting School of Engineering, 2018
20. Quantitative Finance Club Symposium, Rutgers University, 2018
21. Master of Science in Finance Lecture Series, Johns Hopkins Carey Business School, 2015—2017
22. Bloomberg Quant Seminar (BBQ) Lightning Talk, New York, 2016
23. Morgan Stanley Quant Seminar, New York, 2016
24. Fifth International IMS-FIPS Workshop, Rutgers University & Columbia University, 2015
25. Master of Science in Financial Engineering Lecture Series, University of California in Los Angeles, 2014—2016
26. Executive Education, Certificate in Portfolio Management, Columbia University, 2009 and 2010
27. Masterclass, Certificate in Quantitative Finance, New York, 2008
28. Equity Derivatives Workshop, The University of Chicago, 2005, 2007, 2009 and 2014
29. 14th Annual CAP Workshop on Derivatives Pricing and Risk Management, Columbia University, 2007
30. Risk07, London, 2007
31. Discussion on "The perception of time, risk and return during periods of speculation" (Derman, 2002), Ehess & Collège de France seminar organized by Prof. Henri Berestycki and Roger Guesnerie, 2006

SERVICE, DISTINCTIONS & OTHER QUALIFICATIONS

Grants	UNC Charlotte Faculty Research Grant (2024—2025, $8000)
Organizing	Co-hosted a mini-symposium on "multi-asset financial models" for the SIAM Financial Mathematics and Engineering conference 2021
Refereeing	• Journal of Computational Finance (2024) • Applied Mathematical Finance (2023) • Quantitative Finance, SIAM Journal on Financial Mathematics (2021, 2022) • Stochastic Models, Applied Mathematical Finance (2020)
Chairing	• 1 session at SIAM AN24 conference • 4 half-day streams and 1 panel at the QuantMinds conference series
Committees	UNCC High School Math Contest Exam Committee (2023—2024)
Service	• UNCC Math/Business Quality Enhancement Plan Joint Meetings: Participant (2024) • UNCC Belk College of Business Graduate Program Open House: Participant (2024) • UNCC Graduate Research Symposium: Faculty Judge (2024)
Membership	• SIAM — Society for Industrial and Applied Mathematics • IAQF — International Association of Quantitative Finance • AFA — American Finance Association
Exec. Ed.	• New York Institute of Finance, 2017—2019 • QuantMinds conference series, 2 full-day workshops • Certificate in Quantitative Finance Masterclass, New York, 2008 • Certificate in Portfolio Management, Columbia University, 2009 & 2010
Mentoring	• Advised two groups of NYU MS students for their capstone research projects
Socializing	• Created and led an experimental student investment club for my WPI students • Hosted lunches for two groups of 10 NYU Courant incoming students
Computer	Mathematica, C#, Matlab, Python, Linux/Html/PhP, Bloomberg
Languages	English: fluent. French: native. Italian: advanced.
General	Dual citizen. Former O-1 Visa holder ("alien of extraordinary ability").