BIOGRAPHICAL SKETCH

Ionuţ Florescu

Research Professor of Financial Engineering
Stevens Institute of Technology
Babbio Center, 544
Hoboken, NJ 07030

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1 EDUCATION

Doctor of Philosophy in Statistics, Purdue University, West Lafayette, Indiana, USA December 2004.
Primary Research Area: Mathematics of Finance
Master of Science in Statistics with specialization in Computational Finance, December 2001
Purdue University, West Lafayette, Indiana, USA;
Master of Science in Mathematics with specialization in Stochastic Processes, July 1997
University of Bucharest, Romania;
Bachelor of Science in Mathematics, University of Bucharest, Romania; July 1996

2 PREVIOUS AND PRESENT POSITIONS

PRESENT POSITION

Director Hanlon Financial System Laboratories
Director Financial Analytics Program
Research Professor of Financial Engineering
School of Business
Stevens Institute of Technology
1 Castle Point on Hudson
Hoboken, NJ 07030

Past Appointments

Stevens Institute of Technology, Business School, U.S.A.
Research Professor, Director of the Hanlon Labs, Director of Financial Analytics program, Fall 2019 - present
Research Associate Professor and Director of the Hanlon Financial Systems Lab, Fall 2012 - Spring 2019, *in the School of Systems and Enterprises*
Assistant Professor, Fall 2005 - Spring 2012, *in the Department of Mathematical Sciences*
Purdue University, Department of Statistics, U.S.A.
Visiting Assistant Professor, Spring 2005
Teaching Assistant, Fall 1998 - Fall 2004
Romanian Academy, Center for Mathematical Statistics, Bucharest, Romania
Research Assistant, Fall 1997-Spring 1998
University of Bucharest, Department of Physics, Romania
Lecturer, Fall 1997 - Spring 1998

3 PUBLICATIONS

(a) Authored Books

- Florescu I. *Tree estimation for Stochastic Volatility Models. The Anderson SPDE*, (thesis monograph), publisher: VDM Verlag mbH, April 2010, ISBN 978-3-639-12766-9 Link on Amazon.com
- Florescu I. and C. Tudor, *Handbook of Probability*, co-author Ciprian Tudor, Wiley, ISBN 978-0-470-64727-1, November 2013 link on Wiley site
- Florescu I. *Probability and Stochastic Processes*, Wiley, New York, ISBN: 978-0470624555, Oct 27, 2014, link on Wiley site.
- Mariani M.C. and I. Florescu *Quantitative Finance*, Wiley Interscience, December 12, 2019, Isbn/Ean 1118629957 / 9781118629956, link on Wiley site.

(b) Edited Books

- Viens F., M.C. Mariani, and I. Florescu, *Handbook of Modeling High Frequency Data in Finance* Wiley, ISBN-10 0470876883, ISBN-13 978-0470876886, January 3, 2012 link on Wiley site

- Florescu I., M.C. Mariani, H.E. Stanley, and F. Viens, *Special Issue of Quantitative Finance on "High frequency data analysis"*, published by Quantitative Finance, ISSN 1469-7688, volume 12, issue 4, 2012 link on QF site
- Florescu I., M.C. Mariani, H.E. Stanley, and F. Viens, *Special Issue of Quantitative Finance on "High Frequency Data Modeling in Finance"*, August 2015, pp 1277 link on QF journal site
- Florescu I., M.C. Mariani, H.E. Stanley, and F. Viens, *Handbook of High-Frequency Trading and Modeling in Finance*, Wiley, ISBN 978-1-118-44398-9, 456 pages, April 2016 link on Wiley site

(c) Refereed journal publications and book chapters

1. Margarita Zaika, Dragos Bozdog, Ionut Florescu, "Analysis of rare events using multidimensional liquidity measures", *International Review of Financial Analysis*, Volume 95, Part B, 2024, 103455
2. Dan Wang, Zhi Chen, Ionut Florescu, Bingyang Wen, "A sparsity algorithm for finding optimal counterfactual explanations: Application to corporate credit rating",*Research in International Business and Finance*, 2023
3. Mariani, M. C., Tweneboah, O. K., Bhuiyan, M. A.,Beccar-Varela, M. P., Florescu, I. "Classification of Financial Events and Its Effects on Other Financial Data." *Axioms*, 12(4), 2023.
4. Alves, T. W., Florescu, I., Bozdog, D. "Insights on the Statistics and Market Behavior of Frequent Batch Auctions", *Mathematics*, 11(5), 2023
5. Dan Wang, Tianrui Wang, Ionut Florescu, "Is Image Encoding Beneficial for Deep Learning in Finance? An Analysis of Image Encoding Methods for the Application of Convolutional Neural Networks in Finance", IEEE Internet of Things Journal, Oct 13 2020, DOI: 10.1109/JIOT.2020.3030492
6. Parisa Golbayani, Ionut Florescu, Rupak Chatterjee, " A comparative study of forecasting Corporate Credit Ratings using Neural Networks, Support Vector Machines, and Decision Trees." *The North American Journal of Economics and Finance*, 54, 101251, Nov 1, 2020. https://doi.org/10.1016/j.najef.2020.101251
7. Xiao C., I. Florescu, J. Zhou, "A comparison of pricing models for mineral rights:Copper Mine in China", *Resources Policy*, Volume 65, March 2020, 101546, DOI 10.1016/j.resourpol.2019.101546
8. Mariani M.C, Masum-Bhuiyan Md, Tweneboah O., Beccar-Varela M, I. Florescu, "Analysis of stock market data by using Dynamic Fourier and Wavelets techniques", *Physica A*, Volume 537, 1 January 2020, DOI 10.1016/j.physa.2019.122785
9. Ye Z. and I. Florescu. "Extracting information from the limit order book: New measures to evaluate equity data flow." *High Frequency* (2019), vol 2, 37-47, March 2019 DOI: 10.1002/hf2.10029
10. Zhao H., R. Chatterjee, T. Lonon, Ionut Florescu, "Pricing Bermudan Variance Swaptions Using Multinomial Trees", *Journal of Derivatives*, Spring 2019, 26 (3) 22-34;
DOI: https://doi.org/10.3905/jod.2019.26.3.022
11. Zhao Z., Z. Cui, and I. Florescu "VIX derivatives valuation and estimation based on closed-form series expansions", *Journal of Financial Engineering*, vol. 5, No. 2, June 2018
12. Florescu I and F. Viens, "Editorial" *High Frequency Journal*, vol. 1(1), April 2018, pages 1-2
13. Mariani M.C., M. Bhuiyan, O. Tweneboah, H. Gonzalez-Huizar, and I. Florescu, "Volatility models applied to geophysics and High Frequency financial market data", *Physica A*, vol. 503, Aug 2018, pages 304-321
14. Zhao H., Z. Zhao, R. Chatterjee, T. Lonon, and I. Florescu "Pricing Variance, Gamma and Corridor Swaps Using Multinomial Trees", *Journal of Derivatives*, Winter 2017, 25 (2), pages 7-21
15. Salighehdar A., Z. Ye, M. Liu, A. Blumberg, and I. Florescu "Ensemble based storm surge forecasting models", *Weather and Forecasting*, vol. 32, nr. 5, Oct 2017, pages 1921-1936
16. Salighehdar A., Y. Liu, D. Bozdog, and I. Florescu "Cluster analysis of liquidity measures in a stock market using high frequency data", *Journal of Management Science and Business Intelligence*, Vol.2, No.2, August 2017,
17. Patel V., P. Thukral, M. Burns, I. Florescu, R. Chandramouli, R. Vinjamuri "Hand Grasping Synergies as Biometrics", *Frontiers in Bioengineering and Biotechnology*, section *Bionics and Biomimetics*, May 2017, doi: 10.3389/fbioe.2017.00026
18. Patel V., J. Craig, M. Schumacher, M. Burns, I. Florescu, R. Vinjamuri "Synergy Repetition Training Versus Task Repetition Training in Acquiring New Skill". *Frontiers in Bioengineering and Biotechnology*, section *Bionics and Biomimetics*, February 2017, doi: 10.3389/fbioe.2017.00009
19. Burns M., V. Patel, I. Florescu, K. Pochiraju, and R. Vinjamuri, "Low Dimensional Synergistic Representation of Bilateral Reaching Movements", *Frontiers in Bioengineering and Biotechnology*, February 2017, doi: 10.3389/fbioe.2017.00002
20. Beccar-Varela M, M. Mariani, O. Tweneboah, and I. Florescu, "Analysis of the Lehman Brothers collapse and

the Flash Crash event by applying wavelets methodologies", *Physica A: Statistical Mechanics and its Applications*, vol 474, May 2017, pp 162-171 DOI:10.1016/j.physa.2017.01.064

21. Florescu I. and F. Levin, "Estimation procedure for regime switching stochastic volatility model and its applications", in *Handbook of High-Frequency Trading and Modeling in Finance*, chapter 5, pp 107-136, April 2016.
22. Beccar-Varela Maria P., Francis Biney, and Ionut Florescu, "Long correlations and fractional difference analysis applied to the study of memory effects in high frequency data.", *Quantitative Finance*, August 2015, pp 1365-1374 DOI: 10.1080/14697688.2015.1032547
23. Lienard J., I. Florescu, N. Strigul, "An Appraisal of the Classic Forest Succession Paradigm with the Shade Tolerance Index", *PLoS One*, 10(2):e0117138. doi:10.1371/journal.pone.0117138, Feb 2015
24. Florescu I., M.C. Mariani, I. Sengupta "Option pricing with transaction costs and stochastic volatility", *Electronic Journal of Differential Equations*, Volume 2014, 30 July 2014
25. Florescu I., M.C. Mariani and G. Sewell "Numerical Solutions to an integro-differential parabolic problem arising in the pricing of financial options in a Levy market", *Quantitative Finance*, vol. 14, Iss. 8, 2014
26. Florescu I, R. Liu, M.C. Mariani, G. Sewell, "Numerical Schemes for Option Pricing in Regime-Switching Jump Diffusion Models", *International Journal of Theoretical & Applied Finance*, Vol. 16, No.8, Dec 2013.
27. Mariani M.C., I. Florescu, I SenGupta, M.P. Beccar Varela, P. Bezdek, L. Serpa, "Levy models and scale invariance properties applied to Geophysics", *Physica A* Volume 392, Issue 4, 15 February 2013, Pages 824—839
28. Florescu I, R. Liu, M.C. Mariani, "Solutions to a Partial Integro-Differential Parabolic System Arising in the Pricing of Financial Options in Regime-Switching Jump Diffusion Models", *Electronic Journal of Differential Equations*, Vol. 2012 (2012), No. 231, pp. 1-12. 2012
29. Strigul N., I. Florescu, A. Welden and F. Michalczewski, "Modelling of forest stand dynamics using Markov chains", *Environmental Modelling & Software*, vol. 31, pp. 64-75, May 2012.
30. Brock S., I. Florescu and L. Teran "Tools for Change: An Examination of Transformative Learning and Its Precursor Steps in Undergraduate Students", ISRN Education, vol. 2012, Article ID 234125, 5 pages, 2012. (DOI:10.5402/2012/234125)
31. Mariani M.C., P. Bezdek, L. Serpa, I. Florescu, "Ising type models applied to Geophysics and high frequency market data", *Physica A* , vol. 390, nr. 23-24, pp 4396-4402, Nov. 2011.
32. E. Barany, M.P. Beccar Varela, I. Florescu and I. SenGupta, "Detecting Market crashes by analyzing long memory effects using high frequency data", *Quantitative Finance* special issue in High Frequency Data modeling, volume 12, issue 4, April 2012, p. 623-634.
33. Florescu I. and C. Tudor, "Estimation of the long memory parameter in stochastic volatility models by quadratic variations", *Random Operators and Stochastic Equations (ROSE)*, vol. 19, issue 2, pp 197-216, 2011
34. Bozdog D., I. Florescu, K.Khashanah and J. Wang, "Rare Events Analysis of High-Frequency Equity Data", *Wilmott Journal*, Volume 2011, Issue 54, Pages 74-81, July 2011
35. Bozdog D., I. Florescu, K. Khashanah, and H. Qiu, "Construction of Volatility Indices using a Multinomial Tree Approximation Method", in *Handbook of high frequency data analysis*, chapter 5, Jan 2012
36. Bozdog D., I. Florescu, K.Khashanah and J. Wang, "A study of persistence of price movement using High Frequency Financial Data" in *Handbook of high frequency data analysis*, chapter 2, Jan 2012
37. Florescu I. and M. C. Mariani, "Solutions to integro-differential parabolic problems arising in the pricing of financial options in a Levy market", *Electronic Journal of Differential Equations*, Vol. 2010(2010), No. 62, pp. 1-10.
38. Mariani M.C., I. Florescu, M.P. Beccar Varela and E. Ncheuguim, "Study of memory effects in international market indices", *Physica A*, 389(8), April 2010, pp 1653-1664
39. Ulibarri C., I. Florescu, and J. Eidsath "Regulating Noisy Short-Selling Of Troubled Firms?", *Journal of Financial Economic Policy*, vol. 1, no. 3, 2009, pp 227-245
40. Florescu I. and C. G. Pãsãricã, "A study about the existence of leverage effect in Stochastic Volatility models", *Physica A*, 388(4), Feb. 2009, pp 419-432.
41. Mariani M.C., I. Florescu, M.P. Beccar Varela and E. Ncheuguim, "Long correlations and Levy Models applied to the study of Memory effects in high frequency (tick) data", *Physica A*, 388(8), April 2009, p. 1659-1664
42. Ulibarri C., P. Anselmo, K. Hovespian and I. Florescu "Noise-Trader Risk" And Bayesian Market Making In FX Derivatives: Rolling Loaded Dice?, *International Journal of Finance and Economics*, 2009, vol. 14, issue 3, p. 268-279
43. Stolkin R. and I. Florescu, Probability of detection and optimal sensor placement for threshold based detection

systems, *IEEE Sensors*, 9(1), Jan. 2009, 57-60

44. Florescu I. A summary of recent and old results on the security of the Diffie-Hellman key exchange protocol in finite groups, book chapter in Ed/s S. Lian and Y. Zhang, *Handbook of Research on Secure Multimedia Distribution*, Information Science Reference, New York, March 2009, ISBN: 978-1-60566-262-6, chapter X, p.181-200.
45. Bach, J.R, I. Florescu, I. Wendel, A Christmas celebration for a sexually transmitted fatal condition, *American Journal of Physical Medicine and Rehabilitation*,vol. 87, nr. 12, December 2008, pages 1052-1053.
46. Florescu I. and F. Viens, Stochastic volatility: option pricing using a multinomial recombining tree, *Applied Mathematical Finance*, vol. 15, no. 2, April 2008, 151-181.
47. Florescu I. and F. Viens, Sharp estimation for the almost-sure Lyapunov exponent of the Anderson model in continuous space. *Probability Theory and Related Fields*, vol. 135, no. 4, Aug 2006, pages 603–644.
48. Florescu I. and F. Viens, A Binomial Tree Approach to Stochastic Volatility Driven Model of the Stock Price. *Annals of the University of Craiova, Mathematics and Computer Science Series*, vol. 32 (2005), p. 126-142.

(d) Refereed Conference Proceedings articles

1. Zhiyuan Yao, Ionut Florescu, Chihoon Lee, Control in Stochastic Environment with Delays: A Model-based Reinforcement Learning Approach, Proceedings of the International Conference on Automated Planning and Scheduling (ICAPS), volume 34, pages 663-670, June 1-6, 2024 Alberta, Canada
2. Zhiyuan Yao, Zheng Li, Matthew Thomas, Ionut Florescu, Reinforcement Learning in Agent-Based Market Simulation: Unveiling Realistic Stylized Facts and Behavior, The International Joint Conference on Neural Networks (IJCNN) 2024, June 30-July 5, 2024, Yokohama, Japan
3. Golbayani, P., Wang, D., Florescu, I. Application of Deep Neural Networks to Assess Corporate Credit Rating (07th ed., vol. 14). World Academy of Science, Engineering and Technology. 2020
4. Alves T.W., I Florescu, G Calhoun, D Bozdog, SHIFT: A Highly Realistic Financial Market Simulation Platform, accepted to 6th International Symposium in Computational Economics and Finance, Paris 10/29/2020
5. Mago Damini, Amin Salighehdar, Mansi Parekh, Dragos Bozdog and Ionut Florescu, "Liquidity Risk and Asset Movement Evidence from Brexit", *Proceedings of the 2017 IEEE Symposium Series on Computational Intelligence* (SSCI) (SSCI 2017), Nov 27- Dec 1, 2017, Hawaii
6. Patel V., P. Kulkarni, R. Chandramouli, M. Burns, I. Florescu, and R. Vijnamuri "A Novel Biometric based on Neural Representations of Synergistic Hand Grasps", IEEE Future Technologies Conference (FTC) 2017, 29-30 November 2017, Vancouver, BC, Canada
7. Salighehdar A., Z. Ye, M. Liu, I. Florescu, A.F. Blumberg, "Statistical Comparison of Ensemble Based Storm Surge Forecasting Models", in *Conference proceedings of the ICCOE 2017 : 19th International Conference on Coastal and Ocean Engineering*, San Francisco, USA, September, 28-29, 2017
8. Lienard J., Florescu I., Strigul N. "An appraisal of the classic forest succession paradigm with the Shade Tolerance Index." In Stanton, Sharon M.; Christensen, Glenn A., comps. Pushing boundaries: new directions in inventory techniques and applications: Forest Inventory and Analysis (FIA) symposium 2015. 2015 December 8-10; Portland, Oregon. Gen. Tech. Rep. PNW-GTR-931. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. p. 267-271. link
9. Bozdog D., I. Florescu, K. Khashanah, J. Wang: Rare Events Analysis for High-Frequency Equity Data. *Proceedings of the 10th International Workshop on Rare Event Simulation*, Amsterdam, August 27-29, 2014
10. Stolkin R., D. Rees, M. Talha, I. Florescu: Bayesian Fusion of Thermal and Visible Spectra Camera Data for Region Based Tracking with Rapid Background Adaptation. *Proceedings of 2012 IEEE International Conference on Multisensor Fusion and Information Integration*, MFI 2012 13-15 Sep 2012 (top three paper in several categories)
11. Stolkin R., D. Rees, M. Talha, I. Florescu: Bayesian fusion of thermal and visible spectra camera data for mean shift tracking with rapid background adaptation, *Proceedings of IEEE Sensors*, 11th IEEE SENSORS 2012 Conference, 28-31 October 2012
12. Stolkin R., I. Florescu, M. Baron, C. Harrier and B. Kocharov: Efficient visual servoing with the ABCshift tracking algorithm, *Proceedings of the 2008 IEEE International Conference on Robotics and Automation*, Pasadena, CA, 19-23 May 2008, p. 3219-3224
13. Stolkin R., I. Florescu: Probabilistic analysis of a passive acoustic diver detection system for optimal sensor placement and extensions to localization and tracking, *Proc. IEEE MTS OCEANS 2007*, Sept. 29 2007 – Oct. 4 2007, p. 1-6.

14. Stolkin R., I. Florescu, G. Kamberov: An adaptive background model for CAMSHIFT tracking with a moving camera, *Advances In Pattern Recognition*, Proceedings of the Sixth International Conference Indian Statistical Institute, Kolkata, India 2–4 January 2007, World Scientific Publishing, p. 147-151.

(e) Non-refereed publications.

- Luvishis, E., Vemulapalli, B., Walther, P., Ronai, J., Florescu, I. (2021). Financial Times Series Generation and Analysis with Generative Adversarial Network Algorithms. NCUR 2021.
- Dan Wang, Zhi Chen, Ionut Florescu, A Sparsity Algorithm with Applications to Corporate Credit Rating, arXiv preprint arXiv:2107.10306, July 21, 2021
- Dan Wang, Tianrui Wang, Ionuţ Florescu, Is Image Encoding Beneficial for Deep Learning in Finance? An Analysis of Image Encoding Methods for the Application of Convolutional Neural Networks in Finance, arXiv preprint arXiv:2010.08698, Oct, 17, 2020
- Alves T.W., I Florescu, G Calhoun, D Bozdog, "SHIFT: A Highly Realistic Financial Market Simulation Platform", published on SSRN, March 20, 2020.
- Ye, Ziwen and Florescu, Ionut, COVID-19 and the Equity Market. A March 2020 Tale (March 30, 2020). Available at SSRN: https://ssrn.com/abstract=3566281 or http://dx.doi.org/10.2139/ssrn.3566281
- Chen Z., O. Hui, ZL Wong, M. Tian, I. Florescu, "Double Sampling Kalman Filter with Applications in Investment Fund Reconstruction Problems", presented at Bloomberg seminar, and published on SSRN, November 14, 2018
- Khashanah K, I. Florescu and S. Yang, "On the impact and future of HFT: white paper", paper sponsored by IRRC institute, September 2014 link
- D. Bozdog, I. Florescu, R. Stolkin. "Single click image segmentation using mean shift". Abstract in *Perception, Journal of the Applied Vision Association*, vol. 38, pp. 625-626, 2009.
- D. Bozdog, I. Florescu, R. Stolkin. "Optimal parameter selection for mean shift type segmentation algorithms". *Abstract in Perception, Journal of the Applied Vision Association*, vol. 38, pp. 626, 2009.
- Florescu I. "Pricing using Implied Volatility Surface", technical report, Purdue University, TR05-02
- Florescu I. "Queuing Processes - An introduction with Proposed Applications to Finance", technical report, Purdue University, TR05-01
- D. Bozdog, I. Florescu, R. Stolkin. "Single click image segmentation using mean shift". Abstract in *Perception, Journal of the Applied Vision Association*, vol. 38, pp. 625-626, 2009.
- D. Bozdog, I. Florescu, R. Stolkin. "Optimal parameter selection for mean shift type segmentation algorithms". *Abstract in Perception, Journal of the Applied Vision Association*, vol. 38, pp. 626, 2009.

4 GRANTS & PATENTS

- NSF CRAFT [Center for Research toward Advancing Financial Technologies], "Extending, simulating and scaling decentralized exchanges made by automated market makers.", Co-PI, with Z. Feinstein (PI) and I. Barac (Co-PI), June 1 2023 - May 31 2024, ($100,000)
- ERASMUS+ Mobility Award, to give an 8 hour lecture to AUEB, November 21-25, 2022
- NJ Opportunity Meets Innovation, Challenge Grant (NJ), 2021-2022 ($10,000)
- CAPCO research grant to support creation of a market exchange replica to serve for research and teaching, 2020-2022 ($120,000)
- UBS research grant to support corporate credit rating using machine learning research, 2018-2019, ($60,000)
- Ignition Grant from Stevens Institute of Technology, PI, Aug 2017 - July 2018, ($12,000)
- CME Foundation grant to support the research projects at the Financial Systems Center at Stevens, PI, January 2017-Dec 2019, ($100,000)
- CME Foundation grant to support the research projects at the Financial Systems Center at Stevens, PI, April 2015-March 2016, ($85,000)
- Investor Responsibility Research Center (IRRC) Institute grant for developing a white paper on the current status and future of the High Frequency Traders in the financial markets, co-PI, Aug 2013-Feb 2014, ($59,940)
- Nvidia grant to develop GPU compute infrastructure based on Nvidia Tesla cards, and recognition of Stevens Institute as a Research Center in CUDA, PI, 8 GPU cards donated, market value at $28,000
- NSF-1309861 Conference on Modeling High Frequency Data in Finance 5; Fall 2013; Hoboken, NJ, Principal Investigator, June 1, 2013 - May 31, 2014 ($40,000).
- NSF-1209054 Conference on Modeling High Frequency Data in Finance 4; Summer 2012; Hoboken, NJ, Principal Investigator, April 1, 2012 - March 31, 2013 ($44,410).

- NSF-1106027 Collaborative research: Conference on Modeling High Frequency Data in Finance III; Summer 2011; Hoboken, NJ, Principal Investigator, April 1, 2011 - March 31, 2012 ($30,960).
- Proposal "Rare events and connection with crash phenomena", (PI) submitted to CFTC, with K. Khashanah and D. Bozdog, partially funded by the School of Systems and Enterprises for collaboration with U.S. Commodity Futures Trading Commission (CFTC) May 15 - Oct 15, 2011 ($10,000)
- NSF-1007650 Conference on Modeling High Frequency Data in Finance II; Summer 2010; Hoboken, NJ, Principal Investigator, April 15, 2010 - March 31, 2011 ($25,000). Other related awards received from International Mathematical Union (IMU), American Statistical Association (ASA), Institute of Mathematical Statistics (IMS).
- NSF-0907371 Conference on Modeling High Frequency Data in Finance; Summer 2009; Hoboken, NJ, Principal Investigator, March 15, 2009 - February 28, 2010 ($15,000). Other related awards received from International Mathematical Union (IMU), American Statistical Association (ASA), Institute of Mathematical Statistics (IMS) and International Association of Financial Engineers (IAFE).
- **Provisional Application** - US 62/239,351 - sHIFT, System, Apparatus and Methods for Observing, Interacting with and Testing Virtual Market, June 15, 2015, with J. Zeng, Z. Ye, D. Bozdog, G. Calhoun.

- **Patent**: *Real-time tracking of non-rigid objects in image sequences for which the background may be changing*, with Rustam Stolkin, US 8374388 B2, Feb 12, 2013
- Contributor to *Polymorphic tracked vehicle*, US 8333256 B2, Dec 18,2012.

5 HONORS, AWARDS

- I.W. Burr award for academic excellence and quality of the thesis research, May 2005.
- Purdue Research Foundation Grant, Purdue University, August 2003 - December 2004
- Puskas Memorial Fellowship for the Academic Year 2002-2003, Purdue Universit
- Merit Scholarship, 1991-1997, University of Bucharest, Romania

6 TEACHING EXPERIENCE

Undergraduate Courses:

Probability and Statistics for engineers, Elementary Statistical Methods, Statistics for Liberal Arts students, Intermediate Statistics, Differential Equations, Introduction to Financial Time Series

Graduate Courses:

Stochastic Calculus, Probability Theory, Stochastic Processes, Mathematical Statistics, Real Analysis, Pricing and Hedging, Computational Methods in Finance, Portfolio Theory and Investments, Time Series, Applied Statistics with applications to Finance, Multivariate Data Analysis, Special Problems in FE and in FA, Applied Stochastic Differential Equations.

Curriculum Development:

Redesigned the Financial Analytics into the Financial Technology and Analytics Masters program which now has two concentrations: Financial Data Science and FinTech (2022) (with Z. Feinstein)
Developed a dual Master program with Athens University of Economics and Business AUEB (2022)
Helped develop the the curriculum for the dual Master program with Universita Piemonte Orientale UPO (2021)
Redesigned the Master program in Financial Analytics and introduced three new concentrations in Fintech and machine Learning, Data Analytics and Optimization, and Advanced Risk Analytics (2021)
Developed the new 4+1 Master degree agreement between Seton Hall (CS and Math) and Stevens FE and FA (with T. Lonon) (2021)
Developed the new 4+1 Master degree agreement between Keio University (Japan) and Stevens FE and FA programs (2021)
Developed the new certificate Quantitative Data Science for the UBS cohort (2019)
Helped develop the curriculum for the dual Master program with Ca'Foscari University, Italy (2019)
Helped develop the curriculum for the dual Master program with Bocconi University, Italy (2018)
New program: Certificate in Machine Learning in Finance (12 credits) (Oct 2018)
Redesigned the Master in Financial Analytics (from 33 credits to 30 credits and changed curriculum)
New program: Certificate in Financial Computing (15 credits) (Dec 2015) (with D. Bozdog)
New program: Certificate in Financial Statistics (12 credits) (Dec 2015)

New course: FE 641 Multivariate Statistics and Advanced Time Series in Finance (2017)
New course: FE 542 Time Series with Applications to Finance (2014)
New course: FE 541 Applied statistics with applications in Finance (2014)
New course: FE 505 Financial Lab: Technical Writing in Finance (2014)
New course: FE 511 Financial Lab: Introduction to Bloomberg and Thomson Reuters (2013) (with D. Bozdog)
New course: FE 512 Financial Lab: Database Engineering (2013) (with D. Bozdog)
New course: FE 513 Financial Lab: Practical Aspects of Database Design (2014) (with D. Bozdog)
New course: FE 514 Financial Lab: VBA in Finance (2015)
New course: FE 515 Financial Lab: R in Finance (2013)
New course: FE 516 Financial Lab: MATLAB for Finance (2013)
New course: FE 517 Financial Lab: SAS for Finance (2013) (with D. Bozdog)
New course: FE 518 Financial Lab: Mathematica for Finance (2013) (with D. Bozdog)
New course: FE 519 Financial Lab: Advanced Bloomberg (2015) (with D. Bozdog)
New course: FE 520 Financial Lab: Introduction to Python for Financial Applications (2013)
New course: FE 521 Financial Lab: Web Design (2013)
New course: FE 522 Financial Lab: C++ Programming in Finance (2013) (with D. Bozdog)
New course: FE 529 Financial Lab: GPU Computing in Finance (2013) (with D. Bozdog)

Served in the Stevens Institute Graduate Curriculum Committee from 2013 to 2015 and from 2018 to 2019.
Served in the Financial Engineering Curriculum Committee since 2006
Served in the FE Ph.D. Committee since 2012

Course Redesign

New course content: QF 202 Introduction to Time Series, redesigned the course in 2017.
New course content: FE 540 Probability Theory for Financial Engineering, redesigned the course in 2018 and using the Handbook at the main textbook.
New course content: FE621 Computational Methods in Finance, (redesigned in 2007, 2017, 2019), developed the textbook for this course, structured the class and introduced advanced topics such as stochastic volatility modeling and Lévy processes.
New course content: MA 331 Intermediate Statistics, completely redesigned the class, using software (R) throughout the course, and using advanced statistical methods. (2007)
New course content: MA 611 Probability Theory and MA623 Stochastic Processes, redesigned the courses in 2005 and wrote lecture notes – which became my 2014 book.

7 Conference and Seminar presentations

- Florescu, I., Feinstein, Z., Gill, B. S., "ESG Data: Validity and Certification," Oral Presentation, NSF CRAFT Fintech Center, Rensselaer Polytechnic Institute, Troy, NJ, United States. (March 2023).
- Florescu, I., Feinstein, Z., Gill, B. S., "ESG. Towards a unifying approach,", NSF CRAFT Fintech Center, Stevens Institute of Technology, Hoboken, NJ, United States. (November 2022)
- Zaika, M., Bozdog, D. (presenter), Florescu, I., "Analysis Of Rare Events Using Multidimensional Liquidity Measures Based on High-Frequency Trade And Quote (TAQ) And Limit Order Book (LOB) MarketData", Conference Presentation, 2022 INFORMS Annual Meeting, Indiana Convention Center, Indianapolis, IN, United States. October 17, 2022
- Florescu, I., Wang, D., Chen, Z., "A Sparsity Algorithm for Finding Optimal Counterfactual Explanations: Application to Corporate Credit Rating," AMS 2022 Fall Central Sectional Meeting., El Paso, Texas,El Paso, TX, United States. (September 17, 2022
- Florescu I., Corporate Credit Rating using Machine Learning Techniques, a series of 8 hour lectures given at Athens University of Economics and Business, Athens Greece, part of the ERASMUS+ mobility program. November 21-25, 2022
- Florescu, I., Wang, D., Chen, Z., AMS 2022 Fall Central Sectional Meeting., "A Sparsity Algorithm for Finding Optimal Counterfactual Explanations: Application to Corporate Credit Rating", El Paso, Texas, El Paso, TX, United States. (September 17, 2022).
- Florescu, I., Lonon, T., Hatzakis, E., Seton Hall Mathematics and CS Department Colloquium, "Hanlon Laboratories Research and Coordinated program in FM (Seton Hall) and FA/FE (Stevens Institute)", Seminar, Seton Hall (April 1, 2022).

- Florescu, I., Alves, T., Bozdog, D., Calhoun, G., USC: Mathematical Finance Colloquium, "SHIFT a Market Replica for risk assessment and regulatory compliance", USC. (March 21, 2022).
- Parisa Golbayani, Wang, D., Florescu, I., ICCRMA003 2021: XV. International Conference on Credit Risk Modeling and Analysis, "Application of Deep Neural Networks to Assess Corporate Credit Rating", Conference Presentation, Tokyo, Japan. (July 22, 2021).
- Kashyap Sriram, Ionut Florescu, Dragos Bozdog, "Hidden Markov Model for Limit order book and its application to Algorithmic trading", SIAM Conference on Financial Mathematics and Engineering 2021, June 1, 2021
- Luvishis, E., Vemulapalli, B., Walther, P., Ronai, J., Florescu, I. (2021). Financial Times Series Generation and Analysis with Generative Adversarial Network Algorithms. NCUR 2021.
- Zach Feinstein, Florescu, I., Bozdog, D., Faculty Forum, "Machine Learning in Finance," Oral Presentation, Stevens Institute of Technology School of Business, Virtual. (November 13, 2020).
- Ionut Florescu, Thiago Alves, Dragos Bozdog, George Calhoun, AMS 2020 Fall Central Sectional Meeting, September 12, 2020
- Md Al Masum Bhuiyan, Maria C Mariani, Maria P Beccar Varela, Ionut Florescu, AMS 2020 Fall Central Sectional Meeting, September 13 2020.
- Alves T.W., I Florescu, G Calhoun, D Bozdog, SHIFT: A Highly Realistic Financial Market Simulation Platform, accepted to 6th International Symposium in Computational Economics and Finance, Paris 2020
- Ionut Florescu, Thiago Winkler, "sHiFT. Experimenting with a Market Exchange Replica", 45th Eastern Economics Association (EEA), Annual Conference, NYC, Feb 28-March 3, 2019
- Ziwen Ye, I. Florescu, "Data flow analysis in U.S. equity financial markets", Frontiers in High-Frequency Financial Econometrics, 28-29 September 2018.
- Teza Technologies seminar, *Market Exchange Replica and Real Markov processes*, industry talk, March 19, 2019
- CAPCO financial group seminar, *Introducing SHIFT a market exchange replica*, industry talk, Nov 12, 2018
- Ionut Florescu, Thiago Winkler, "sHiFT. Experimenting with a Market Exchange Replica", 45th Eastern Economics Association (EEA), Annual Conference, NYC, Feb 28-March 3, 2019
- Md Al Masum Bhuiyan, Maria C. Mariani, Ionut Florescu, "Estimation of Stochastic Volatility in High Frequency Financial Data Using Long Memory Effects." 4th International Conference on Big Data and Information Analytics (BigDIA), Texas Medical Center, Houston, TX, December 17-19, 2018.
- Ionut Florescu, Honglei Zhao, Thomas Lonon, Rupak Chatterjee "Pricing Variance Derivatives Using Trees", 5th Rutgers Applied Probability Conference, Rutgers University, November 16, 2018
- *Symposium on Optimal Stopping, in memory of Larry Shepp*, Pricing Variance Derivatives, Rice University, Texas, June 25-29, 2018
- Md Al Masum Bhuiyan, Maria C. Mariani, Ionut Florescu, "The Estimation of Long-Memory Spectrum in High Frequency Financial Data." The 38th International Symposium on Forecasting, Colorado, June 17-21, 2018.
- *The Eastern Conference on Mathematical Finance*, "Algorithmic trading / Machine learning in finance: Assessing the algorithms' interaction and impact", Columbia University, NY, Nov 3-5, 2017
- *Workshop on HFT data*, Sao Paolo, Brazil, Nov 2014.
- *Market microstructure and High-Frequency data*, "High Frequency Trading. A Survey, Analysis and Testing Methodology", University of Chicago, May 29-31, 2014
- Georgetown and Stevens, *An introduction to High Frequency Trading*, a 3 hour lecture for Chinese businessman, Nov 14, 2012
- Columbia University & CUNY, Risk Seminar, *Detecting Rare Events in Financial markets*, Oct 26, 2011
- CUNY Graduate Center, Probability Seminar, *Estimation for regime switching stochastic volatility models*, Oct 18, 2011
- Rutgers University, Mathematical Finance and Probability Research Seminar, *A study of nonlinear PDE's and PIDE's appearing in Finance*, March 1, 2011
- *Sixth Rutgers-Stevens Workshop on Optimization of Stochastic Systems*, "Estimation of hidden Markov chain parameters and applications of the model to finance climate and geophysical data", Stevens Institute of Technology, New Jersey, USA, Nov 4-5, 2011
- *Eastern Economic Association Annual Conference, 37 edition*, "A Study of Persistence of Price Movement Using High Frequency Financial Data", New York, NY, USA, Feb 25-27, 2011.
- *Mathematical Finance and Partial Differential Equations 2011* "Numerical solutions to an integro-differential parabolic problem arising in the pricing of financial options in a Levy market", New Brunswick, New Jersey, USA, Nov 4, 2011

- Stevens Society of Financial Engineers Seminar, *High frequency data analysis. An introduction*, Stevens Institute, March 10, 2011
- 7City learning, Wilmott School, *High Frequency Data Analysis: An introduction and some proposed strategies*, Nov 8, 2010
- Columbia University, Mathematical finance Seminar, *Estimation for Hidden Markov Chain stochastic volatility models: Applications to analysis of High-Frequency Data*, Feb 10 2010
- The City University of New York, Applied Mathematics Seminar, *A study of an integro-differential parabolic problem arising in Mathematics of Finance: Existence and approximation*, Feb 5 2010
- *Mathematical Finance and Partial Differential Equations 2010*, "Numerical solutions to partial integro-differential equations appearing in financial mathematics", New Brunswick, New Jersey, USA, Dec 10, 2010
- *AMS Special Session on Financial Mathematics*, 2010 Spring Western Section Meeting, Albuquerque, New Mexico, USA, "Study of solution for a PIDE relevant for Mathematical finance using upper and lower solutions: Existence and approximation", April 17-18, 2010
- *AMS Special Session on Mathematical Finance*, Penn State University, USA, "Stochastic volatility models: Parameter estimation for a reduced model", Oct. 24-25, 2009
- *Workshop on Stochastic Analysis*, Purdue University, USA, "A study of an integro-differential parabolic problem arising in Mathematics of Finance ", Sep 29 - Oct 1, 2009
- *Conference on Modeling High Frequency Data in Finance*, Hoboken, NJ, USA, "Continuous time Stochastic Volatility models: Applications to High-Frequency Data", July 10-12, 2009
- *Fifth Rutgers-Stevens Workshop on Optimization of Stochastic Systems*, Rutgers University, USA, "Theoretical Comparison of Two Projection-Pursuit Clustering Algorithms", March 20- 21, 2009
- Worcester Polytechnical Institute, Mathematical Sciences Department Colloquium, *Estimation of parameters present in continuous time Stochastic Volatility models*, May 1 2009
- New Mexico State University, Mathematics Seminar, *Stochastic Volatility models: Estimation*, March 2009
- CUNY Graduate Center, Applied Mathematics Seminar, *Leverage effect in Stochastic Volatility models. What is it and what are conditions for its appearance?*, October 17, 2008
- Stevens Institute, Mathematical Sciences Colloquium, *A Clustering/Selection method to capture the systematic movement of Equity's Return*, May 6 2008
- Rutgers University, Mathematical Finance and Probability Seminars, *A Clustering/Selection method to capture the systematic movement of Equity's Return*, April 15 2008
- CUNY Graduate Center, Algebra and Cryptography Seminar, *Looking at the Diffie-Hellman key exchange protocol from a statistical perspective*, February 29, 2008
- *9éme Colloque Franco-Roumain de Mathématiques Appliquées*, Universitatea Transilvania, Brasov, Romania, "A clustering/selection method to capture the systematic movement of equity's return", Aug. 28- Sept. 2, 2008.
- *2007 Fall Western Section Meeting* AMS sectional meeting, University of New Mexico, "Stochastic Volatility models: Leverage effect in continuous time", October 13-14 2007.
- *Kent-Purdue Mini-symposium on Financial Mathematics (3rd edition)*, Kent University, "Estimating parameters for Diffusion Equations with a hidden factor", April 27–28, 2007
- *Fourth Rutgers Stevens Workshop on Optimization of Stochastic Systems*, Stevens Institute of Technology "Statistical methods in cryptography. An application to the Diffie-Hellman exchange protocol", March 30–31, 2007
- *Stochastic Processes and their Applications SPA 07(32nd edition)*, University of Illinois at Urbana-Champaign, "Analyzing discrete time stochastic volatility models", August 6–10, 2007
- *American Mathematical Society sectional meeting*, Stevens Institute of Technology April 14–15, 2007
- University of Cincinnati *Statistical methods in Cryptography. An application of relative entropy and permutation testing to asses the security of the Diffie-Hellman exchange protocol.*, November 6, 2007
- Stevens Society of Mathematicians (SSM) *Stochastic Calculus: Application to calculating Leverage effect in Stochastic Volatility models*, September 19, 2007.
- Kent University *Option pricing for stochastic volatility models using a highly recombining tree*, April 23, 2007
- Bloomberg seminar series, *Option pricing under a stochastic volatility model, using a stochastic, highly recombining tree.*, March 15, 2007
- *2006 International Workshop on Applied Probability*, University of Connecticut, USA, "Coefficient Estimation for Stochastic Volatility Models", May 15–18, 2006
- Stevens Institute, *Mini-Lecture Series in Stochastic Integration*, Sep 20 – Oct 20, 2006
- Stevens Institute, Computer Science- Security Seminar, *Statistical approach to the Decision Diffie-Hellman Prob-*

lem, Oct 2, 2006.

- Purdue University, Computational Finance Seminar, *Coefficient Estimation for Diffusion Models*, Apr 28, 2006
- *Third Rutgers-Stevens Workshop on Optimization of Stochastic Systems*, Rutgers University, USA, "Option Pricing Using Recombining Trees", Sep 30–Oct 1, 2005
- Stevens Institute of Technology, Nonlinear Systems Seminar, *Sharp estimation of the almost-sure Lyapunov exponent for the Anderson model in continuous space*, Oct 4, 2005
- Stevens Institute of Technology, Stochastic Systems Seminar, *Stochastic Volatility Stock Price - Option Pricing and Coefficient Estimation*, Feb 18 2005
- Purdue University, Probability Seminar, *A Lower Bound for the Exponential Behavior of the Solution to the Anderson Stochastic Parabolic Equation*, Jan 18, 2005.
- Purdue University, Computational Finance Seminar *A Binomial Tree Approach to Stochastic Volatility Driven Model of the Stock Price*, Apr 23, 2004
- Purdue University, Probability Seminar, *Tree Approximation to the Option Price in the Stochastic Volatility World*, Sep 28, 2004
- *Le 7'e Colloque Franco-Roumain de Matematique Appliquees*, Craiova, Romania, "A Binomial Tree Approach to Stochastic Volatility Driven Model of the Stock Price", Aug 30–Sep 3, 2004
- *Summer School in Probability*, Saint-Flour, France, "Pricing using Implied Volatility Function", 2003
- *Summer School in Mathematics of Finance*, Cortona, Italy, "Equilibrium Prices in Incomplete Markets", 1997

8 PROFESSIONAL ACTIVITIES AND AFFILIATIONS

Editor:

Associate Editor for Frontiers in Applied Mathematics and Statistics, Mathematical Finance, 2020- present link
Associate Editor for Mathematics, 2021 - present link
Associate Editor for Data Science in Finance and Economics, 2022 - present link
Editor in Chief for the High Frequency Journal (ISSN)2470-6981 from Jan 2018 to Dec 2019
Co-editor for the Handbook of *High Frequency Data Models*, with M. Mariani and F. Viens, Jan 2012.
Co-editor for a Special Issue on *High frequency data models in Finance* hosted by the Quantitative Finance Journal. Co-edited with M. Mariani, H.E. Stanley and F. Viens. April 2012.
Co-editor for the Handbook of *High Frequency Trading*, with M. Mariani, H.E. Stanley, and F. Viens, Nov 2015.
Co-editor for a Special Issue on *High Frequency Data Modeling in Finance* hosted by the Quantitative Finance Journal. Co-edited with M. Mariani, H.E. Stanley, and F. Viens. August 2015.

Conference and Seminar Organizer

The 8th High Frequency Finance and Data Analytics Conference, June 27-29 2019. Principal organizer. Co-organizers M.C. Mariani, F. Viens.
The 7th Annual High Frequency Finance and Data Analytics, Nov 3-5 2016. Principal organizer. Co-organizers M.C. Mariani, F. Viens.
The 7th Annual High Frequency Finance and Data Analytics, Nov 3-5 2016. Principal organizer. Co-organizers M.C. Mariani, F. Viens.
The 6th Annual High Frequency Finance and Data Analytics, Oct 29-31 2015. Principal organizer. Co-organizers M.C. Mariani, F. Viens and H.E. Stanley.
The 5th Annual Modeling High Frequency Data in Finance, Oct 24-26 2013. Principal organizer. Co-organizers M.C. Mariani, F. Viens and H.E. Stanley.
The 4th Annual Modeling High Frequency Data in Finance, July 19-22 2012. Principal organizer. Co-organizers Maria Mariani, Frederi Viens and H.E. Stanley.
Conference on Modeling High Frequency Data in Finance III, July 28-31 2011. Principal organizer. Co-organizers Maria Mariani and Jose Figueroa-Lopez.
Conference on Modeling High Frequency Data in Finance II, June 24-27 2010. Principal organizer. Co-organizers Maria Mariani and Frederi Viens. This was the second edition of the workshop. Two collection volumes will be published from the proceedings.
Special session on "Financial Mathematics" at the Spring 2010 Meeting of the AMS Western Section at University of New Mexico. Co-organizer with Maria Mariani and M.P. Beccar-Varella.
Conference on Modeling High Frequency Data in Finance, July 10-12 2009. Principal organizer. Co-organizers Maria Mariani and Khaldoun Khashanah. The conference was one of the largest in the area with 123 participants.
Stevens Institute of Technology *Financial Engineering Seminar*, Spring 2007 -Spring 2009

Stevens Institute of Technology *Stochastics Systems Seminar, Math Colloquium*, Fall 2005 – Spring 2007
Section Chair, *JSM 2005*, Section on Nonparametric Statistics, Aug 7-11, 2005

Reviewer of manuscripts

Journal reviews Ain Shams Engineering Journal, American Statistician, Annals of Finance, Annals of Operations Research, Applied mathematical Finance, Communications on Stochastic Analysis (COSA), Communications in Statistics - Simulation and Computation, Computational Economics, Decisions in Economics and Finance,Financial Research Letters, Financial Markets and Portfolio Management, Frontiers in Mathematical Finance, International Journal of Computer and Mathematics, International Journal of Theoretical and Applied Finance, IEEE Transactions in Pattern Analysis and Machine Intelligence (TPAMI), Journal of Commodities Markets, Journal of Scientific Research and Reports, Mathematical and Computer Modeling, mathematical Problems in Engineering, Mathematical Finance, Mathematical Reviews, Mechanical Systems and Signal Processing, Methodology and Computing in Applied Probability, Physica A, Quantitative Finance, RISK, SIAM Journal on Optimization, Stochastics.
Book reviews Elsevier, Springer, Taylor and Francis, Wiley, World Scientific Publishing.
Grant reviews Canada Foundation for Innovation, Natural Sciences and Engineering Research Council of Canada (NSERC), MITACS Canada, Chech Science Foundation, DHS, NSF

Other professional development and affiliations

Attended Summer School in Probability, *Saint-Flour*, France, 2003
Attended Summer School in Mathematics of Finance, *Cortona*, Italy, 1997
Co-author of the Option Calculator Program "K-Option," *http://koptioncalc.sourceforge.net/*
IMS (Institute of Mathematical Statistics) , Member
ASA (American Statistical Association), Member

9 SCHOOL AND INSTITUTE SERVICE

Member Budget Advisory Committee, delegate as chair of APAR, (August 2021 - August 2023)
Member of the Academic Planning and Resources committee at Stevens (2021-2024), served as Chair (2021-2023)
Member elect of the Stevens Faculty Senate committee (2018-2021), delegate as APAR chair (2021-2023)
Member of the Research Entrepreneurship and Commercialization (RETCOM) Board of Trustee committee (2018-2021)
Chair of the FE preliminary exam committee (since 2018)
Chair of the FA program committee (since 2019)
Member of the BI&A committee (since 2017), FE committee, FE Ph.D. Committee (since they were created)
Member of the Graduate Curriculum Committee for Stevens Institute of Technology (2013-2015, 2017-2019)
Member of the academic appeals committee, undergraduate curriculum committee and the library committee at Stevens Institute of Technology. (2006-2008)
Collaboration and clearance obtained to work with the U.S. Commodity Futures Trading Commission (CFTC) to study the effect of high frequency traders on the U.S. markets. Part of this obtained a $10,000 from Stevens SSE internal grant to support this research. (2010)
Webmaster for the Mathematical Sciences Department, the Stochastic Systems program and the Financial Engineering program at Stevens Institute of Technology.

(a) Government and Public Service

Government - NSF Panel on Applied Mathematical Finance (2017)
Government - DHS Panel on Data Mining (2017)

10 DISSERTATIONS CHAIRED

(a) Ph.D. major advisor (graduated students):

- Francesco Fabozzi, Thesis: A New Framework for the Application of Generative Language Models for Portfolio Construction , Ph.D. in Data Science, May 2024, Current Position: Research Director at Yale University
- Dan Wang, Thesis: Application of Deep Learning to Corporate Credit Rating, Ph.D. in Financial Engineering, December 2021, Current Position: Machine Learning and Data Science Lead at JP Morgan Asset Management
- Thiago Winkler Alves, Thesis: A Laboratory Environment for Financial Markets, Ph.D. in Financial Engineering, August 2020, Current Position: Software Engineer at Interactive Brokers
- Ziwen Ye, Thesis: Detecting, Analyzing and Categorizing Financial Events in High Frequency Trading and Its Application, Ph.D. in Financial Engineering, May 2020, Current Position: Postdoctoral Researcher at Tsinghua

University School of Economics and Management, China

- Parisa Golbayani Thesis: Application of statistical and machine learning techniques to detect rare events in high frequency financial data and assess corporate credit rating, Ph.D. in Financial Engineering, Dec 2019, Current Position: VP, Data Strategy & Analytics, RAMPP Quants, RBC Capital Markets
- Amin Salighehdar Combining distinct measurements into a comprehensive indicator: a study in High Frequency finance and climatology, Ph.D. in Financial Engineering, June 2018, Current position: Vice President, Data Scientist Lead at JPMorgan Chase&Co
- Honglei Zhao, Thesis: Pricing variance derivatives using trees, Ph.D. in Financial Engineering, May 2018, Current position: Morgan Stanley
- Christopher Flynn, Thesis: Hurst parameter estimation of a discretely sampled Ito integral with fractional Brownian motion driven integrand, Ph.D. in Mathematical Sciences, Dec 2015. Current Position: Director of Machine Learning Systems at SimpleBet
- Kristina Krsteva, Thesis: Estimation and optimization of linear multi-factor models of stock returns and detection of an underlying regime-switching process, Ph.D. in Mathematical Sciences, Dec 2014. Current position: Vice-President at Goldman Sachs
- Dragoş Bozdog, Thesis: A study of rare events in high-frequency financial data, Ph.D. in Financial Engineering, Dec 2014. Current position: Deputy Director Hanlon Lab at Stevens Institute of Technology
- Thomas Lonon, Thesis: Option Pricing Utilizing a Jump Diffusion Model with a Log Mixture Normal Jump Distribution, Ph.D. in Mathematical Sciences, May 2013. Current position: Teaching Associate Professor at Stevens Institute of Technology.
- Forrest Levin. Thesis: Monte Carlo estimation of stochastic volatility for stock values and potential applications to temperature and seismographic data, Ph.D. in Mathematical Sciences, May 2010. Current position: Adjunct Instructor at Nassau Community College
- Darryl Neil Penenberg. Thesis: Statistical tests for the autoregressive structure in a time series, Ph.D. in Mathematical Science, May 2010, (co-advisor with D. Dentcheva). Current position: CEO and owner at DNP Consultants

Ph.D. major advisor (current students):

FE Ph.D. program: Zhiyuan Yao, William Long (2024, both co-supervising with Chihoon Lee), Zhi Chen (2025, co-supervising with Zach Feinstein), You (Eric) Wang (2026, co-supervising with Zhenyu Cui)

Master Thesis major advisor:

- Zhi Chen, FE August 2021 “A sparsity algorithm with applications to corporate credit rating",
- Siqi Jiang, BI&A, May 2021 “Multi-source default probability prediction framework applying attention mechanism”,
- Sriram Kashyap Prasad, FE Dec 2020, “Dynamic High Frequency trading algorithm”,
- Timothy Stanton, FE Dec 2019, “Predicting CRISPR Cas-9 Negative Selection Outcomes from sgRNA Sequences”,
- Nikhil Nirhale, FE May 2018, ‘Estimation of the Hurst exponent in fractional Brownian motion driven volatility using high frequency data and option prices”
- David Carnahan, FE May 2015,“Does a 130/30 Tangency Strategy give higher returns than a Long Only Strategy in the Chinese Stock Market”

Undergraduate students working on senior design projects:

- Colin Baker, Robert Gummer, Yuri Veksler, David Yi, Michael Dooley, “Investigating the suitability of ESG corporate rating”, 2021-2022
- Bharddwaj Vemulapalli, Markus Zebrowski, Nikhil Shah, Sean Martin, Parsh Jain, “SHIFT: Determining the Costs of Correlation”, 2020-2021
- Michael J Di Pentima, Peter A Demkowicz, Christopher M Albano, Simon Mandel, “Using volatility as a factor in portfolio construction”, 2020-2021
- Sidharth Peri, Ella Crabtree, Jeffrey Eng, “Determining the factors that influence the efficacy of a trading strategy”, Summer 2021
- Xu, Binquan, “Credit rating research”, University of Liverpool, Summer 2021
- Apeksha Jain, Dec 2018, “Feature selection in Credit Rating”, undergraduate thesis for Birla Institute of Technology and Science (BITS) Pilani, Goa Campus (co-advising with Mayanik Goel)
- Shenghuan Yang, “Credit rating research”, self funded student from China, Summer 2019
- Chang Xiao “A comparison of pricing models for mineral rights:Copper Mine in China”, visiting Ph.D. student from China University of Geosciences, Aug 2017 - Sep 2018,
- Matthew Murphy, Mike Wezyk, Arthur Krivoruk, Andrew Kubis, Laramie Regalado, “Robo Advisor”, 2017-2018.

- Morgan Baron, Kirk Deligiannis, Colin Harrier, Matt Hochberger, Boris Kocherov "Design of a Vision Guided Robotic Vehicle", AY 2007-2008, (co-advising with G. Kamberov and R. Stolkin), won the award for the best senior design project at Stevens 2008;
- Alicia Welden and Fabian Michalczewski, "Hierarchical scaling of forest dynamics to the landscape level: modeling of forest stand dynamics" (2011) (co-advising with Nikolay Strigul),
- Joe Trinsey "Comprehensive Statistics for the game of Voleyball" (2009)

Graduate committee member:

Ludmyla Rekeda (Ph.D. Mathematics 2005), Thomas Surowiec (Masters' Mathematics 2006), Gregory Stock (Masters' Mathematics 2007), Yuri Aldrich (Masters' Financial Engineering 2007), Hongwei Qiu (Masters' FE 2010), Viorel Dragnea (Ph.D. Computer Sciences 2011), Laurentiu Sega (Ph.D. Mathematics, Purdue University, 2011), Luis Ortega (Ph.D. Financial Engineering, Stevens, 2013), Kristi Lee Luttrell (Ph.D., Mathematical Sciences, Stevens, 2013), Laksmhi Iswara Chandra Vidyasagar (Ph.D., Mathematical Sciences, Stevens, 2013), Eduardo Osorio (Ph.D. Mathematics, Rutgers, 2014), Eli Wolfhagen (Ph.D. mathematics, Stevens, 2015), May Wang Chao (Ph.D. Physics, Stevens, 2015), Monika M. Heinig (Ph.D. Mathematics, Stevens, 2015), Elias Wolfhagen (Ph.D. Mathematics, Stevens, 2015) Ph.D. Bartosz Luczynski (Ph.D. Computer Science, Stevens, 2015), Greg Stock (Ph.D. Mathematical Sciences, Stevens, 2017), Shui Yu (Ph.D. Operations Research, Rutgers University, 2017), Gary Engler (Ph.D. Mathematical Sciences, Stevens, 2018), Ying Zheng (Ph.D. Mathematical Sciences, Stevens, 2018), Qiang Wu (Ph.D. Operations Research, Rutgers University, 2018), Dhananjay Salgaocar (Masters FE, 2019), Yunfeng Liu (Masters FE, 2019), Serkan Alkan (Ph.D. Financial Engineering, Stevens, 2019), Ying Zhang, (Ph.D. Mathematics, July 2020), Agathe Sadeghi (Masters' FE, 2020), Ruizhi Hao (Masters FE, 2021), Chung Chen (Masters FE, 2021), Alexis Doucette (Ph.D. Mathematical Sciences, 2022), Qingyun Pei (Masters FE, 2022), Daniel Coelho, (Ph.D. in Mathematics, 2022) Monash University, Australia, Margarita Zaika (Masters FE, 2022).

(b) Teaching Honors and Awards

Member of the Stevens Teaching Advisory Committee 2016-2024. Top rated professors at Stevens are members of this committee chaired by the vice-provost for Academics at Stevens.