



Dorđević Jasmina

Curriculum Vitae

PERSONAL DETAILS

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EDUCATION

PhD in Mathematics

2006-2013

Faculty of Science and Mathematics, University of Niš

My research interests are in theory of probability and stochastic processes, and their applications to stochastic control and optimisation. I wanted to expand my knowledge in this field. I started my PhD studies in 2006 and completed them in 2013 with the highest possible GPA 10.00 (ten).

Exams passed:

Measure and Integration (grade: 10),
Methodology of Scientific Research (grade: 10),
Probability Theory (grade: 10),
Theory of Martingales (grade: 10),
Stochastic Processes (grade: 10),
Risk Management (grade: 10),
Stochastic Differential Equations (grade: 10),
Stochastic Models in Finance (grade: 10),
Risk Theory (grade: 10).

PhD Thesis: *Backward Stochastic Differential Equations with Perturbations*, defended on June 20th, 2013, Faculty of Sciences and Mathematics, University of Niš, Serbia, supervised by Professor Svetlana Janković.

MSc in Mathematical Finance

2004-2006

Faculty of Science and Mathematics, University of Niš

My interest in stochastic processes began during my undergraduate studies when I first got acquainted with this topic. It didn't take a lot of time to decide that my professional orientation should be in the theory of stochastic processes. I earned my BSc degree from the Faculty of Sciences and Mathematics, University of Niš, Serbia.

During my masters studies, I got a scholarship from the Norwegian Government and the City of Niš on the merit of a high GPA. In November 2004, I attended the course Financial Mathematics held in Plovdiv, Bulgaria, and the course Graph Theory in Chemistry and Engineering held in May 2005. I completed the undergraduate with a GPA of 9.67 (10.00 being the maximum) and was declared the "student of the generation" at Mathematics Department. In the same year I got a one-month travel through Europe as an award from the Austrian Embassy in Serbia, the European Youth Movement in Serbia, and the Serbian Ministry of Education. I got my MSc degree on June 12th, 2006, by defending the thesis titled: "Stochastic Models for Interest Rates", marked with the highest possible grade, 10.00. My interest in the application of mathematics in nance has already started in this work. As a natural continuation to my studies, I enrolled in the PhD program and expanded my knowledge in stochastic analysis and nance.

BSc in Mathematician

2001-2004

Faculty of Science and Mathematics, University of Niš

My interest in mathematics goes back to elementary school, and ever since then it has been my only scientific and professional commitment.

WORK EXPERIENCE

Associate Professor

2018-present

Department of Mathematics, Faculty of Sciences and Mathematics, University of Niš

Full-time Courses: Probability; Theory of Mass Service (Queueing Theory), Financial Modeling 1 (deterministic case); Financial Modeling 2 (stochastic case), Theory of Martingales (Phd level), Probability in biology, Mathematics for Biology Students.

Postdok position

Sept. 2020-
Jan. 2023

Department of Mathematics, University of Oslo

project: STORM - Stochastics for Time-Space Risk Models project,
supervisor: **Prof. Giulia Di Nunno** (<https://sites.google.com/view/giuliadinunno/home>)

Assistant Professor

2013-2018

Department of Mathematics, Faculty of Sciences and Mathematics, University of Niš

Full-time Courses: Probability; Theory of Mass Service (Queueing Theory), Financial Modeling 1 (deterministic case); Financial Modeling 2 (stochastic case).

Teaching Assistant

2006-2013

Department of Mathematics, Faculty of Sciences and Mathematics, University of Niš

Full-time Courses: Introduction to Probability, Mathematics for Chemistry Students, Mathematics for Biology Students, Differential Equations, Modeling in Finance 1 (deterministic case), Modeling in Finance 2 (stochastic case).

Teacher of Mathematics

2008-2011,
2013-2016

Svetozar Marković High School, Niš, a special class for students gifted in mathematics

Part-time Subjects: Algebra and Analysis.

Honors

2013-2018

Faculty of Sciences and Mathematics, University of Niš

Coordination of preparatory classes for the entrance examination for Department of Mathematics. (Actively involved in teaching at preparatory classes.)

Honors

Faculty of Sciences and Mathematics, University of Niš
Secretary of the Department of Mathematics and Informatics.

October 2011
-January
2012

Honors

Faculty of Sciences and Mathematics, University of Niš
Secretary of the Department of Mathematics.

February-
October 2012

Honors

Bank of Niš, Niš
Practice during undergraduate studies.

May 2004
-June 2004

Honors

HVB Bank, Niš
Practice during undergraduate studies.

January 2004
-April 2004

SKILLS

<i>Languages</i>	Serbian (mother tongue) English (fluent) French (basic) Norsk (basic)
<i>Software</i>	MATLAB, Mathematica, L ^A T _E X, ANSYS, COMSOL , R, Python etc.

REFERENCES

I took part in following meetings:

CONFERENCES:

- 2022.

1. “Uzbekistan-Ukrainian readings in stochastic processes, 2022”:
 - 12th May, Title of the talk: “*Backward stochastic differential equations*”,
 - 19th May, Title of the talk: “*Backward stochastic differential equations with interaction*”.
2. 7th CROATIAN MATHEMATICAL CONGRESS June 15-18, 2022, Split, Croatia . Presented work with the title: “*Modelling of epidemics with time-changed Lévy process*”.
3. The 9th International Colloquium on BSDEs and Mean Field Systems, June 27-July 1, 2022, Annecy, France, Title of the talk: “*Reflected Backward Stochastic Differential Equations with Time-change Lévy noises.*”
4. STORM Workshop 2022, 5-8 September, Oslo, Norway (took part in the organisation). Presented work with the title: “*Interference of time-change Lévy noises on characterisation of reflected backward stochastic differential equations*”.
5. “Advances in Stochastic Control and Optimal Stopping with Applications in Economics and Finance”, 12 – 16 September, 2022, CIRM, Marseille, France.

Presented: “*Time-changed Lévy process and application of stopping problems to RBSDEs*”.

6. Recent developments in stochastic with applications in mathematical physics and finance – Tunis, 17-21 October 2022. I gave (invited speaker) with the title: “*On reflected backward stochastic differential equations driven by time-changed Lévy noise*”.

- **2021.**

1. Actively involved in the seminar “Theory of Stochastic processes”, organized by Academy of Sciences, Kiev, Ukraine, from February 2021. Presentation: “*Clark representation for random measures*”, February , 2021 (online).
2. “PhD/Postdoc gathering “Cheerful Stochastics besides Corona Risks”, organized by STORM — Stochastics for Time-Space Risk Models, Department of mathematics, University of Oslo, Norway, 12th October 2021. Title of the talk: “*Stochastic analysis of spread preventions in case of SARS-CoV-2 virus*”. (One of coorganizers of the event.).
3. Seminar “Malliavin Calculus and its Applications”, organized by Academy of Sciences, Kiev, Ukraine, 19th October 2021, title of the talk: “*Backward stochastic differential equations with interaction*”.(online)

- **2020.**

1. Actively involved in the seminar “Theory of Stochastic processes”, organized by Academy of Sciences, Kiev, Ukraine, from February 2020. Presentations:
 - “*Notes about Backward Stochastic Differential Equations*”, May 2020 (online).
 - “*Connection of BSDEs with SPDEs, Feymann Kac formula*”, September 2020 (online).
2. Actively involved in STAR seminars workshops, organized by the STORM project on the Department of Mathematics, University of Oslo, Norway. Presentations: 1. “*Perturbation problems of BSDEs their application*”, October 2nd, 2020 (online).
3. PhD/Postdoc gathering “Cheerful Stochastics besides Corona Risk”, 28.10.2020., Department of Mathematics, University of Oslo, Norway. Title of the talk: “*A stochastic epidemical model for the spread of HIV virus*”.
4. “Recent Developments in Stochastics”, the 2-days webinar on November 23-24, 2020, talk with a title: “*Perturbation effects on Backward Doubly Stochastic Differential Equations their applications*”.

- **2019.**

1. 2nd Training School on Optimal Control Theory, Epidemiological Mathematical Modelling and Mosquito Control Strategies, Finnish Meteorological Institute (FMI), Kumpula district, 4-7 March 2019, presented paper: “*Stochastic SICA model for HIV transmission*”.
2. CONFERENCE: Perturbation Techniques in Stochastic Analysis and Its Applications (Techniques perturbatives en analyse stochastique et applications), CIRM, Marseille, 11 – 15 March 2019, presented a summary of a few papers under the title: “*Some eects of perturbations on solutions of backward doubly stochastic diereential equations*”.

3. "Biology, Analysis, Geometry, Energies, Links [bagel19]: A Program on Low-dimensional Topology, Geometry, and Applications", Institute for Mathematics and its Applications, University of Minneapolis, Minnesota, 17-28 June 2019, presented: "*Some stochastic SICA epidemic models for HIV transmission*".
4. "Edinburgh Slow-Fast-Ival", International Center for Mathematical Sciences, Edinburgh, UK, July 4 – 5, 2019. I gave a talk as an invited speaker with the title: "*Reected Backward Stochastic Dierential Equations with Perturbations*".
5. "CSA2019 – Conference in Stochastic Analysis and Applications", Risor, Norway, 25.-30.8.2019., presented a summary of a few papers under the title: "*Perturbed backward stochastic dierential equations*".
6. "Susret matematičara Srbije i Crne Gore", Budva, Crna Gora, 11.-14.10.2019., Paper presented: "*Eects of perturbations on the applications of reected backward stochastic dierential equations*".

- **2018.**

1. The Training School on Optimal Control Theory and Mosquito Control Strategies, Department of Mathematics of the University of Aveiro, Portugal, from 19th to 21th April 2018, under the COST Action CA16227 – Investigation and Mathematical Analysis of Avant-garde Disease Control via Mosquito Nano-Tech-Repellents and as part of the activities of the new Thematic Line on BioMath of CIDMA (Center for Research Development in Mathematics and Applications). I gave a lecture as an invited speaker with a title: "*A stochastic SICA epidemic model for HIV transmission*".
2. Special Working Group Meeting for WG1 and WG2 in Aveiro/Portugal 19th July 2018, under the COST Action CA16227 – Investigation and Mathematical Analysis of Avant-garde Disease Control via Mosquito Nano-Tech-Repellents and as part of the activities of the new Thematic Line on BioMath of CIDMA (Center for Research Development in Mathematics and Applications). I gave a lecture as an invited speaker with a title: "*A stochastic SICA epidemic model for HIV transmission*".
3. European Women in Mathematics General Meeting 2018 Celebrating 30 years of the EWM, Karl-Franzens-Universitat Graz, Austria, 3-7 September 2018. Paper presented: "*Z-algorithm for backward stochastic dierential equations*".
4. 2. General Scientific Meeting (2.GSM) of COST Action 16227, congress Centre Ohrid, Hotel Of St Cyril And Methodious University, Ohrid, fYR Macedonia, 1-3 October 2018, presented paper: "*A stochastic SICA epidemic model for HIV transmission*".

- **2017.**

1. Mini symposium "Stochastic vibrations and Fatigue: Theory and Applications", Belgrade, Serbia, July 4th, 2017. I gave a talk as a invited speaker with the title: "*Some eects of perturbations on solutions of backward stochastic dierential equations*".
2. The 39th Conference on Stochastic Processes and their Applications (SPA2017), Moscow, Russia, July 24-28, 2017. Paper presented: "*A class of solutions of Backward Stochastic Dierential Equations*".
3. A Probability Summer School, Centro di Recerca Mathematica Ennio De Giorgi, University of Pisa, September 13-15, 2017. Paper presented: "*Kneser type of problem for backward doubly stochastic dierential equations*".

- **2016.**

1. 7th European Congress of Mathematics, Berlin, Germany, July 18 – 22, 2016. Paper presented: *“On a class of backward stochastic Volterra integral equations”*.

- **2014.**

1. 13th Serbian Mathematical Congress, Vrnjacka banja, Serbia, May 22-25, 2014. Paper presented: *“Perturbed backward stochastic Volterra integral equations”*.

- **2011.**

1. First Mathematical Conference, Pale, Bosnia and Herzegovina, May, 2011. Paper presented: *“Backward doubly stochastic differential equations with generalised coefficients”*.

- **2008.**

1. Sozopol Conference, XIII International Summer Conference on Probability and Statistic (ISCPS), Sozopol, Bulgaria, June 21-28, 2008. Paper presented: *“Backward stochastic differential equations with perturbations”*.
2. 12TH SERBIAN MATHEMATICAL CONGRESS, Novi Sad, Serbia, August 28-September 2, 2008. Paper presented: *“Backward-forward stochastic differential equations with perturbations”*.

- **2006**

1. SYM-OP-IS Conference, Banja Koviljaca, Serbia, October 3 – 6, 2006. Papers presented: *“Binomial models for interest rates”* and *“Vasicek’s model”*.

SUMMER SCHOOLS, WORKSHOPS AND MATHEMATICAL EVENTS:

- **2021.**

1. Participation in: “14th Oxford-Berlin Young Researchers Meeting on Applied Stochastic Analysis”, On Zoom, February 10th – 12th 2021.
2. Participation in “Special Online Event Stochastic Processes and their Friends”, Special Event Online Zoom, This first edition of the conference celebrates the scientific career of Prof. Alexander Yu. Veretennikov, 18-19 March 2021.
3. Participation in “Beyond the Boundaries”, New Directions in Financial and Actuarial Mathematics., organized by University of Leeds, UK, 4-7 May, 2021, online.
4. Participation in “Theory of Probability and Its Applications: P.L. Chebyshev – 200” (The 6th International Conference on Stochastic Methods), (May 17–22, 2021, online). 2020.
5. Participation in: . “Malliavin Calculus and its Applications” held online on Tuesdays, 2020.
6. Participation in Workshop on High-Dimensional Stochastics, 7-9. September 2020 (online).
7. Participation in Rough paths and SPDEs 10–11 December, 2020. (online).

- **2019.**

1. "EMC for Future Highly Integrated Systems", Prague, Czech Republic, April 1-2, 2019.
2. "1st International conference on Political Decision Making and – Diseases – Interdisciplinary Research, Complexity and Bio-Mathematics", Valenca, Portugal, April 4-5, 2019. Erasmus sta week "Workshop-discovering Spain", 15.7.-19.7.2019., Jan, Spain.
3. Chairman at 21st European Young Statisticians Meeting, Belgrade 29 July – 02 August 2019. 2016.
4. I participated in several events linked to Erasmus Plus Project "Re@WBC" – Enhancement of HE research potential contribution to further growth of the WB region (Mapping HR management strategies at EU universities 18-22 April 2016, Liege), and was included in the same projects.

- **2015.**

1. Junior Female Researchers in Probability, Berlin, Germany, October 22-23, 2015. 2013.
2. ITE.LAB MathEconomics Open Course Mathematical Models in Economics Finance, Perm State University, Russia, November 18-29, 2013; (Received the certificate for the attended course.)
3. FinMod (Financial Modelling Conference) 2013, Perm State University, Russia, Faculty of Economics, ISMME Department, November 28, 2013; 2012.
4. Spring School Stochastic Analysis in Finance, organized within the FP7 PEOPLE Marie Curie ITN network Deterministic and Stochastic Controlled Systems and Applications (PITN-GA-2008-213841), University of Brest, Rosco, France, March 6-15, 2012.

- **2010.**

1. "Summer School in Quantitative Finance", Prague, Czech in June 7-9, 2010;
2. Intensive Course Chaos, Expansions and Ito Calculus, Novi Sad, Serbia, September 23-30, 2010;

- **2009.**

1. 22th International Summer School of the Swiss Association of Actuaries, Lausanne, Switzerland, August 10-14, 2009;
2. 2009 Summer School on Parameter Estimation in Physiological Models, Third Event of the EC Marie Curie Conferences Series Mathematical Modelling of Human Physiological Systems with Biomedical Application, Island of Lipari, Sicily, Italy, September 13-26, 2009.

- **2008.**

1. Bio-Math Summer School and Workshop 2008 Stochastic Differential Equation Models with Applications to the Insulin-Glucose System and Neuronal Modeling Middelfart, Denmark (Summer school, August 3-12, 2008; Workshop, August 13-16, 2008);

- **2006.**

1. Winter School in Stochastic Processes, Bitola, Macedonia, November 2006 (two weeks), organized by DAAD;

SHORT SCIENTIFIC VISITS:

- Department of Mathematics and Statistics Campus 2 at Kist Misirkov No 10.A Campus 2, Stip 2000, Republic of Macedonia, from 24.04. until 30.04.2018 (granted by Cost Action 16227).
- Department of Mathematics at the University of Aveiro, University Campus of Santiago 3810-193 Aveiro, Portugal, from 23.01. until 01.02.2019 (granted by Cost Action 16227).
- Faculty of Mathematics, University of Vienna, Austria, week in November, 2019 (granted by Faculty of Mathematics, University of Vienna).
- Faculty of Mathematics, University of Vienna, Austria, week in January, 2020 (granted by Cost Action 15125).
- Academy of Science, Kiev, Ukraine, week in November, 2021 (granted by Academy of Science Kiev & Department of Mathematics, University of Oslo).
- Department of Mathematics, Department for Mathematics, J.J. Strossmayer University of Osijek, 12 days in July, 2022 (granted by Cost Action 18232).

REVIEWS MADE FOR JOURNAL ARTICLES:

1. Applied Mathematics and Computation,
2. Filomat,
3. Thermal Science.
4. Stochastics and Dynamics.
5. Statistics and Its Interface.
6. Reviewer for several books in stochastic and statistic.

GRANTS:

- **Scholarship of City of Niš** on the merit of a high GPA (bachelor and master studies);
- **Norwegian Government** (for the best master students in Serbia);
- **Austrian Embassy in Serbia, the European Youth Movement in Serbia and the Serbian Ministry of Education**, one-month travel through Europe as an award for the 100 best students in Serbia & Montenegro.
- *Best student of the generation* at **Faculty of Sciences and Mathematics, University of Nis, Serbia**, 2006.

- Grant from IMA - Institute for Mathematics and its Applications, University of Minneapolis, Minnesota, United States, for one month visit, June 2019.
- **Coordination and Support Activity Support for Researcher Mobility** "Modelling of the spread of diseases with time change", granted by Research Council of Norway, 4 months, Osijek, Croatia, January-May 2022.

PROJECTS:

I. Scientific:

1. "Functional and stochastic analysis and applications", PMF Nis, Project No. 144003, MNTRS, 2006-2010.

2. "Functional analysis and applications", PMF Nis, Project 174007, MNTRS, 2011-2020.

II. Bilateral:

1. Leader of bilateral project with University of Osijek, Croatia, "Applied stochastic models with short term and long term structure of dependence", 2019.-2022.

III. Erasmus:

1. Member at Erasmus Plus Project "Re@WBC" - Enhancement of HE research potential contribution to further growth of the WB region, 2015–2018.

IV. COST Actions:

1. MC Substitute at COST Action CA16227, COST Association, "Investigation and Mathematical Analysis of Avant-garde Disease Control via Mosquito Nano-Tech-Repellents", 2017–2020.

2. MC at COST Action CA17137, COST Association, "A network for Gravitational Waves, Geophysics and Machine Learning", 2019–.

BOOKS

- "Probability – exercises with basics of theory", Jasmina Djordjević, Faculty of Sciences and Mathematics in Niš, 2018.

- Chapter title: "Perturbed reflected backward stochastic differential equations", Book title: Advances in the Solution of Nonlinear Differential Equations (ISBN 978-1-83968-657-3), Jasmina Đorđević, 2020.

PUBLICATIONS

[22] J. Đorđević, B. Jovanović, *Dynamical analysis of a stochastic delayed epidemic model with Lévy jumps and regime switching*, Journal of the Franklin Institute, accepted.

- [21] Aman, H. Coulibaly, **J. Đorđević**, “*Forward backward stochastic differential equations with delayed generators*”, Stochastics and Dynamics, accepted.
- [20] **J. Đorđević**, “*A stochastic model for malaria and its behavior under insecticide-treated nets*”, July 2022, Studies in Applied Mathematics, <https://doi.org/10.1111/sapm.12515>.
- [19] **J. Đorđević**, K. Rognlien Dahl, “*Stochastic optimal control of pre-exposure prophylaxis for HIV infection*”, Math Med Biol. 2022 Jun 1:dqac003. doi: 10.1093/imammb/dqac003. Epub ahead of print. PMID: 35642745.
- [18] B. Jovanovic, **J. Đorđević**, J. Manojlović, N. Šuvak, “*Analysis of stability and sensitivity of deterministic and stochastic models for the spread of the new corona virus SARS-CoV-2*”, Filomat (2021), Volume 35, Issue 3, 1045–1063.
- [17] **J. Djordjevic**, S. Konjik, D. Mitrovic, A. Novak, “*Global Controllability for Quasi-linear Non-negative Definite System of ODEs and SDEs*”, Journal of optimization theory and applications, (2021), Volume 190, Issue 1, 316–338.
- [16] **J. Đorđević**, A. Dorogovtsev, “*Clark representation formula for the solution to equation with interaction*”, Theory of Stochastic Processes, (2021), Volume 25(41), Issue 2, Pages 9–14.
- [15] **J. Đorđević**, I.Papić, N.Šuvak, “*A two diffusion stochastic model for the spread of the new corona virus SARS-CoV-2*”, Chaos, Solitons Fractals Volume 148 (2021), 10991.
- [14] **J. Đorđević**, “*Some analytic approximations for backward stochastic differential equations*”, Filomat 34:7 (2020), 2235–2251.
- [13] B. Andonovic, V. Andova, T. Atanasova Pacemska, P. Paunovic, V. Andonovic, **J. Djordjevic**, A. T. Dimitrov, “*DISTANCE BASED TOPOLOGICAL INDICES ON MULTIWALL CARBON NANOTUBES SAMPLES OBTAINED BY ELECTROLYSIS IN MOLTEN SALTS*”, BALKAN JOURNAL OF APPLIED MATHEMATICS AND IN-FORMATICS, Volume III, No 1, (2020).
- [12] M. Zdravković, **J. Đorđević**, A. Catić-Djordjević, S. Pavlović, M. Ivković, “*Case study: univariate time series analysis and forecasting of pharmaceutical products’ sales data at small scale*”, ICIST 2020 Proceedings.
- [11] **J. Djordjević**, C. J. Silva, “*A stochastic analysis of the impact of fluctuations in the environment on pre-exposure prophylaxis for HIV infection*”, Soft. Comput. 25, (2021), 6731–6743.
- [10] **J. Djordjević**, C. J. Silva; D. F. M. Torres, “*A stochastic SICA epidemic model for HIV transmission*”, Applied Mathematics Letters, 84 (2018), 168–175.
- [9] **J. Djordjević**, S. Janković, “*Reflected backward stochastic differential equations with perturbations*”, Discrete and Continuous Dynamical System – A, 38(4)(2018) 1833–1848, DOI 10.3934/dcds.2018075.
- [8] **J. Djordjević**, “*Lp-estimates of solutions of backward doubly stochastic differential equations*”, Filomat 31:8(2017) 2356–2379, Vol. 31.

[7] **J. Djordjević**, “On a class of backward doubly stochastic differential equations with continuous coefficients“, IMA Journal of Applied Mathematics, 81 (2016), 26–41.

[6] **J. Djordjević**, S. Janković, “Backward stochastic Volterra integral equations with additive perturbations“, Applied Mathematics and Computation, 265 (2015), 903–910.

[5] **J. Djordjević**, S. Janković, “On a class of backward stochastic Volterra integral equations“, Applied Mathematics Letters, 26 (2013), 1192–1197.

[4] S. Janković, M. Jovanović, **J. Djordjević**, “Perturbed backward stochastic differential equations“, Mathematical and Computer Modelling, 55 (2012), 1734–1745.

[3] S. Janković, **J. Djordjević**, M. Jovanović, “On a class of backward doubly stochastic differential equations“, Applied Mathematics and Computation, 217 (2011), 8754–8764, Corrigendum to On a class of backward doubly stochastic differential equations, Appl. Math. Comput. 218 (2012) 9033–9034.

[2] **J. Djordjevic**, S. Janković, “One-factor interest rates stochastic models – Vasicek model“, Sym-op-is 2006, Banja Koviljača, Zbornik radova, (2006) 429–432.

[1] M. Jovanovic, **J. Đorđević**, “Binomial interest rates models“, Sym-op-is 2006, Banja Koviljaca, Zbornik radova, (2006) 145–148.

ADVISED MASTER THESIS UNDER SUPERVISION

1. "Embedded Markov chain in queuing theory", May 2019.
2. "Application of packet MATHEMATICA in theory of life insurance", October 2019.