CURRICULUM VITAE

Gordan Žitković

The University of Texas at Austin
Department of Mathematics
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Education

Columbia University
Ph.D. Degree in Statistics, 2003 - awarded with distinction. Advisor *I. Karatzas*

Vienna University of Technology and **University of Zagreb**
M.Sc. Degree in Mathematics, 1999. Advisors *W. Schachermayer* and *Z. Vondraček*

University of Zagreb
B.Sc. Degree in Mathematics, 1997

United World College of the Adriatic, Italy
International Baccalaureate, 1993

Employment (long-term positions)

The University of Texas at Austin, Department of Mathematics
Professor, 2017 - present
Associate Professor, 2011 - 2017
Assistant Professor, 2005 - 2011

Carnegie Mellon University, Department of Mathematical Sciences
Postdoctoral Associate, 2003 - 2005

Employment (visiting positions)

University of Oxford, Oxford-Man Institute and Mathematical Institute
Visiting Scholar, 2010

Research Interests

Mathematical finance, Stochastic optimization, Stochastic analysis

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Grants

NSF Grant (sole PI) *Three Topics in Stochastic Analysis: Kyle's model, Systems of BSDEs and Superrough volatility (DMS-2307729)*, Sole PI, $441,331, 2023-2026

NSF Grant (sole PI) *Systems of Backward Stochastic Differential Equations and Applications in Stochastic Financial Equilibrium Theory (DMS-1815017)*, Sole PI, $376,581, 2018-2022

NSF Grant (sole PI) *Stochastic Equilibria and Related Topics in Financial Mathematics (DMS-1516165)* $346,996 2015-2018

NSF Conference Grant (co-PI) *Workshop on Probability, Control and Finance (DMS-1204036)*, $45,000 2012-2013

NSF Collaborative Research Grant (co-PI) *Kinetic Description of Emerging Challenges in Multiscale - Problems of Natural Sciences (DMS-1107465)* $1,000,000, 2012-2017

NSF Conference grant (co-PI) *Workshop on Stochastic Analysis in Finance and Insurance (DMS-1108593)*, $40,000, 2011-2012

NSF CAREER grant (sole PI) *Equilibria and Stability in Financial Markets (DMS-0955614)*, NSF CAREER grant, sole PI, $500,000, 2010-2015

"The Unity Through Knowledge Fund" Grant (co-PI) *Worldwide Distributed Computing in Molecular Biology*, $252,724, 2008-2010

NSF Grant (sole PI) *Stochastic Modeling and Methods in Financial Equilibrium Theory (DMS-0706947)*, $179,953, 2007-2010

Publications (submitted or in preparation)

[1] I. Ekren, B. Mostowski, and G. Žitković (2022) "Kyle's model with stochastic liquidity." Submitted for publication.

Publications (published or accepted for publication)

[1] S. Biagini and G. Žitković (2023) "Representation of random variables as Lebesgue integrals." To appear in Bernoulli.

[2] I. Ekren, B. Mostowski, and G. Žitković (2022) "Kyle's model with stochastic liquidity." Submitted for publication.

[3] J. Jackson and G. Žitković (2022) "Existence and uniqueness for non-Markovian triangular quadratic BSDEs." *SIAM Journal on Control and Optimization*, 60(3):1642–1666.

[4] J. Jackson and G. Žitković (2021) "A characterization of solutions of quadratic BSDEs and a new approach to existence." To appear in Stochastic Processes and their Applications.

[5] C. Kardaras, H. Xing, and G. Žitković (2021) "Incomplete stochastic equilibria with exponential utilities close to Pareto optimality." To appear in 'Stochastic Analysis, Filtering, and Stochastic Optimization: A Commemorative Volume to Honor Mark H. A. Davis's Contributions'.

[6] K. Larsen, H. M. Soner, and G. Žitković (2020) "Conditional Davis pricing." *Finance and Stochastics*, 24:565–599.

[7] K. Weston and G. Žitković (2020) "An incomplete equilibrium with a stochastic annuity." *Finance and Stochastics*, 24:359–382.

[8] R. Fayvisovich and G. Žitković (2019) "A framework for the dynamic programming principle and martingale-generated control correspondences." *Applied Mathematics & Optimization*.

[9] K. Larsen, O. Mostovyi, and G. Žitković (2018) "An expansion in the model space in the context of utility maximization." *Finance and Stochastics*, 22(2):297–326.

[10] H. Xing and G. Žitković (2018) "A class of globally solvable Markovian quadratic BSDE systems and applications." *Ann. Probab*, 46(1):491–550.

[11] J. Li and G. Žitković (2017) "Existence, characterization and approximation in the generalized monotone follower problem." *SIAM J. Control Optim.*, 55(1):94–118.

[12] K. Larsen, H. M. Soner, and G. Žitković (2016) "Facelifting in utility maximization." *Finance and Stochastics*, 20(1):99–121.

[13] G. Žitković (2014) "Dynamic programming for controlled Markov families: abstractly and over martingale measures." *SIAM Journal of Control and Optimization*, 52(3):1597–1621.

[14] J. Choi, M. Sirbu, and G. Žitković (2013) "Shadow prices and well-posedness in the problem of optimal investment and consumption with transaction costs." *SIAM Journal of Control and Optimization*, 51(6):4414–4449.

[15] C. Kardaras and G. Žitković (2013) "Forward-convex convergence of sequences of nonnegative random variables." *Proceeding of the American Mathematical Society*, 141:919–929.

[16] K. Larsen and G. Žitković (2013) "Utility maximization under convex portfolio constraints." *Annals of Applied Probability*, 23(2):665–692.

[17] G. Žitković (2012) "An example of a stochastic equilibrium with incomplete markets." *Finance and Stochastics*, 16(2):177–206.

[18] C. Kardaras and G. Žitković (2011) "Stability of the utility maximization problem with random endowment in incomplete markets." *Mathematical Finance*, 21(2):313–333.

[19] M. Anthropelos and G. Žitković (2010) "On agents' agreement and partial-equilibrium pricing in incomplete markets." *Mathematical Finance*, 20(3):411–446.

[20] M. Anthropelos and G. Žitković (2010) "Partial equilibria with convex capital requirements: Existence, uniqueness and stability." *Annals of Finance*, 6(1):107–135.

[21] T. Zariphopoulou and G. Žitković (2010) "Maturity-independent risk measures." *SIAM Journal on Financial Mathematics*, 1:266–288.

[22] G. Žitković (2010) "Utility theory: historical perspectives." In *Encyclopedia of Quantitative Finance*. John Wiley and Sons Inc., New York.

[23] M. Hlevnjak, G. Žitković, and B. Žagrović (2009) "Hydrophilicity matching : a prerequisite for the formation of protein-protein complexes." *PLoS One*, 5(6):e11169.

[24] M. Owen and G. Žitković (2009) "Optimal investment with an unbounded random endowment and utility-based pricing." *Mathematical Finance*, 19(1):129–159.

[25] T. A. Pirvu and G. Žitković (2009) "Maximizing the growth rate under risk constraints." *Mathematical Finance*, 19(3):423–455.

[26] G. Žitković (2009) "Convex-compactness and its applications." *Mathematics and Financial Economics*, 3(1):1–12.

[27] G. Žitković (2009) "A dual characterization of self-generation and exponential forward performances." *Ann. Appl. Probab.*, 19(6):2176–2210.

[28] K. Larsen and G. Žitković (2008) "On the semimartingale property via bounded logarithmic utility." *Annals of Finance*, 4(2):255–268.

[29] T. Zariphopoulou and G. Žitković (2008) "On maturity-independent risk measures." In *Proceedings of 47th IEEE Conference on Decision and Control*, pages 5596–6501.

[30] K. Larsen and G. Žitković (2007) "Stability of utility-maximization in incomplete markets." *Stochastic Processes and their Applications*, 117(11):1642–1662.

[31] G. Žitković (2006) "Financial equilibria in the semimartingale setting: complete markets and markets with withdrawal constraints." *Finance and Stochastics*, 10(1):99–119.

[32] G. Žitković (2005) "Utility maximization with a stochastic clock and an unbounded random endowment." *Annals of Applied Probability*, 15(1B):748–777.

[33] I. Karatzas and G. Žitković (2003) "Optimal consumption from investment and random endowment in incomplete semimartingale markets." *Annals of Probability*, 31(4):1821–1858.

[34] G. Žitković (2002) "A filtered version of the bipolar theorem of Brannath and Schachermayer." *Journal of Theoretical Probability*, 15(1):41–61.

Graduate and Postgraduate Advising

Postdocs at UT Austin, Department of Mathematics (supervisor):

- *O. Mostovyi* (PhD: Carnegie Mellon University, advisor D. Kramkov) - supervised jointly with M. Sîrbu,
- *K. Weston* (PhD: Carnegie Mellon University, advisor D. Kramkov) - supervised jointly with M. Sîrbu,

- *G. Wu* (PhD: University of California Berkeley, advisors C. Evans and X. Guo)
- *S. Summersille* (PhD: University of California Berkeley, advisor Y. Perez) - supervised jointly with L. Caffarelli
- *G. Brunick* (PhD: Carnegie Mellon University, advisor S. Shreve) - supervised jointly with M. Sîrbu

Ph.D. students at UT Austin, Department of Mathematics (advisor):

- *T. Pace* (in candidacy)
- *J. Jackson* (graduated Aug 2023: employment *University of Chicago, Dickinson Instructor*)
- *R. Fayvisovich* (graduated Aug 2018: employment: *WorldQuant*),
- *P. Goswami* (graduated: Aug 2015: further education: *Vanderbilt University School of Medicine*)
- *J. Li* (graduated: Aug 2015; employment: *Facebook*),
- *J. Choi* (co-advised with M. Sîrbu; graduated June: 2012; employment: associate professor, UNIST, Korea)
- *Y. Zhao* (graduated: May 2012; employment: *Salesforce*, San Francisco)
- *A. DiTanna* (graduated: May 2009; employment: *Goldman Sachs*)
- *M. Anthropelos* (graduated: Dec 2008; employment: associate professor, University of Piraeus, Greece)

Service

National Science Foundation:

- NSF Panelist (several applied math/probability panels, two Career panels, one special panel)

Editorial boards:

- Associate Editor for *Finance and Stochastics* (since 2009)
- Associate Editor for *Mathematical Finance* (2013-2019)

Book reviewing: Springer Verlag, Cambridge University Press, Princeton University Press, MAA Book Reviews