

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

Grants

NSF Grant (sole PI) *Systems of Backward Stochastic Differential Equations and Applications in Stochastic Financial Equilibrium Theory (DMS-1815017)*, Sole PI, \$376,581, 2018-2021

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] J. Jackson and G. Žitković (2021) “Existence and uniqueness for non-markovian triangular quadratic bsdes.” Submitted for publication.
- [2] J. Jackson and G. Žitković (2020) “A characterization of solutions of quadratic BSDEs and a new approach to existence.” Submitted for publication.

Publications
(published or
accepted for
publication)

- [1] 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’.
- [2] K. Larsen, H. M. Soner, and G. Žitković (2020) “Conditional Davis pricing.” *Finance and Stochastics*, 24:565–599.
- [3] K. Weston and G. Žitković (2020) “An incomplete equilibrium with a stochastic annuity.” *Finance and Stochastics*, 24:359–382.
- [4] R. Fayvisovich and G. Žitković (2019) “A framework for the dynamic programming principle and martingale-generated control correspondences.” *Applied Mathematics & Optimization*.
- [5] 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.
- [6] H. Xing and G. Žitković (2018) “A class of globally solvable Markovian quadratic BSDE systems and applications.” *Ann. Probab.*, 46(1):491–550.
- [7] J. Li and G. Žitković (2017) “Existence, characterization and approximation in the generalized monotone follower problem.” *SIAM J. Control Optim.*, 55(1):94–118.
- [8] K. Larsen, H. M. Soner, and G. Žitković (2016) “Facelifting in utility maximization.” *Finance and Stochastics*, 20(1):99–121.
- [9] G. Žitković (2014) “Dynamic programming for controlled Markov families: abstractly and over martingale measures.” *SIAM Journal of Control and Optimization*, 52(3):1597–1621.
- [10] 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.
- [11] C. Kardaras and G. Žitković (2013) “Forward-convex convergence of sequences of nonnegative random variables.” *Proceeding of the American Mathematical Society*, 141:919–929.
- [12] K. Larsen and G. Žitković (2013) “Utility maximization under convex portfolio constraints.” *Annals of Applied Probability*, 23(2):665–692.
- [13] G. Žitković (2012) “An example of a stochastic equilibrium with incomplete markets.” *Finance and Stochastics*, 16(2):177–206.
- [14] C. Kardaras and G. Žitković (2011) “Stability of the utility maximization problem with random endowment in incomplete markets.” *Mathematical Finance*, 21(2):313–333.
- [15] M. Anthopoulos and G. Žitković (2010) “On agents’ agreement and partial-equilibrium pricing in incomplete markets.” *Mathematical Finance*, 20(3):411–446.

- [16] M. Anthropelos and G. Žitković (2010) "Partial equilibria with convex capital requirements: Existence, uniqueness and stability." *Annals of Finance*, 6(1):107–135.
- [17] T. Zariphopoulou and G. Žitković (2010) "Maturity-independent risk measures." *SIAM Journal on Financial Mathematics*, 1:266–288.
- [18] G. Žitković (2010) "Utility theory: historical perspectives." In *Encyclopedia of Quantitative Finance*. John Wiley and Sons Inc., New York.
- [19] M. Hlevnjak, G. Žitković, and B. Žagrović (2009) "Hydrophilicity matching : a prerequisite for the formation of protein-protein complexes." *PLoS One*, 5(6):e11169.
- [20] M. Owen and G. Žitković (2009) "Optimal investment with an unbounded random endowment and utility-based pricing." *Mathematical Finance*, 19(1):129–159.
- [21] T. A. Pirvu and G. Žitković (2009) "Maximizing the growth rate under risk constraints." *Mathematical Finance*, 19(3):423–455.
- [22] G. Žitković (2009) "Convex-compactness and its applications." *Mathematics and Financial Economics*, 3(1):1–12.
- [23] G. Žitković (2009) "A dual characterization of self-generation and exponential forward performances." *Ann. Appl. Probab.*, 19(6):2176–2210.
- [24] K. Larsen and G. Žitković (2008) "On the semimartingale property via bounded logarithmic utility." *Annals of Finance*, 4(2):255–268.
- [25] T. Zariphopoulou and G. Žitković (2008) "On maturity-independent risk measures." In *Proceedings of 47th IEEE Conference on Decision and Control*, pages 5596–6501.
- [26] K. Larsen and G. Žitković (2007) "Stability of utility-maximization in incomplete markets." *Stochastic Processes and their Applications*, 117(11):1642–1662.
- [27] G. Žitković (2006) "Financial equilibria in the semimartingale setting: complete markets and markets with withdrawal constraints." *Finance and Stochastics*, 10(1):99–119.
- [28] G. Žitković (2005) "Utility maximization with a stochastic clock and an unbounded random endowment." *Annals of Applied Probability*, 15(1B):748–777.
- [29] I. Karatzas and G. Žitković (2003) "Optimal consumption from investment and random endowment in incomplete semimartingale markets." *Annals of Probability*, 31(4):1821–1858.
- [30] 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* (in candidacy)
- *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: assistant professor, UNIST, Korea)
- *Y. Zhao* (graduated: May 2012; employment: *Salesforce*, San Francisco)
- *A. DiTanna* (graduated: May 2009; employment: *Goldman Sachs*)
- *M. Anthropolos* (graduated: Dec 2008; employment: assistant 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