Jose V. Alcala-Burgos

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Education

Ph.D. in Mathematics, May 2012, Courant Institute of Mathematical Sciences, New York University.

Dissertation: Optimizing the exercise boundary for the holder of an American option over a parametric family.

Advisor: Prof. Jonathan Goodman.

Appointments

August 2014 - Present, Joven Investigador, CIMAT-Merida and CONACYT.

August 2013 - July 2014. Profesor, ITESO.

July 2013 - August 2013. Lecturer, University of Michigan.

September 2010 - June 2013. Postdoctoral Assistant Professor, University of Michigan.

Research Interests

Applied and computational probability. Monte Carlo methods, stochastic optimization and mathematical finance.

Publications

R. Aldana, J. Vidal Alcala, G. Gonzalez,The random walk of an electrostatic field using parallel infinite charged planes, Rev. Mex. Fis. 61(3) (2015) 154.

Jose V. Alcala-Burgos and A. Fahim, Balancing small fixed and proportional transaction cost in trading strategies, *preprint*.

ArXiv : http://arxiv.org/abs/1304.7562

Jose V. Alcala-Burgos, Ph.D. Thesis, ProQuest (2012).

http://gradworks.umi.com/35/24/3524127.html

Publications in preparation

Jose V. Alcala-Burgos, Monte Carlo approximation of boundary sensitivities for diffusion processes in time dependent domains, *preprint*.

Jose V. Alcala-Burgos and Hala A.H. Shehadeh , Threat detection: Uniqueness of the source and constant drift in the advection diffusion equation using one time measurement, *in preparation*.

Jose V. Alcala-Burgos, Affine invariant stochastic optimization and applications in machine learning, *in preparation*.

Conferences

Affine Invariant Stochastic Optimization, Reunion de Jovenes Investigadores, CIMAT (Guanajuato, Mexico), Dec 2014.

Affine invariant stochastic optimization , Optimization and Big Data 2015, University of Edinburgh (Edinmburgh, UK), May 2015.

Talks

Probability Seminar, CIMAT (Guanajuato, Mexico), Apr 2015.

Colloquium, UADY and CIMAT-Merida, Nov 2014.

Statistics Seminar, UADY (Merida, Mexico), Sep 2014.

First Workshop on Differential Equations and Complex Analysis, CINVESTAV (Juriquilla, Mexico), Jan 2014.

Colloquium, CIMAT (Guanajuato, Mexico), Nov 2013.

Quantitative Methods in Finance Seminar, Universidad Panamericana (Guadalajara, Mexico), Nov 2013.

Applied Math Colloquium, UCLA, February 2013.

Financial/Actuarial Mathematics Seminar, University of Michigan, Sep 2010.

Teaching Experience

UADY

Stochastic Processes, *Fall 2014, Spring 2015*

ITESO

Advanced Calculus, *Spring 2014*.

Simulation of Stochastic Processes with Financial Applications, *Fall 2013*.

Behavioral Finance, *Fall 2013, Spring 2014*.

University of Michigan *(Instructor)*

Boundary Value Problems for Partial Differential Equations, *Spring 2013*.

Introduction to Numerical Analysis, *Summer 2012, Summer 2013*.

Numerical Methods with Financial Applications *Fall 2012.*

Compound Interest and Life Insurance, *Winter 2012.*

Introduction to Mathematical Finance, *Winter 2011, Spring 2011, Fall 2011.*

Calculus I: *Fall 2010*

New York University *(Teaching assistant)*

Introduction to Mathematical Analysis, *Spring 2010.*

Calculus I, *Fall 2006*, *Fall 2009.*

Introduction to Mathematical Analysis (Graduate),*Spring 2009.*

Stochastic Calculus (Graduate), *Fall 2008*

Capital Markets and Portfolio Theory (Graduate), *Fall 2007.*

Undergraduate Mentoring

Summer 2012, Faculty mentor for Sangwon Hyun through the REU program. REU report, *Examining the Complexity of the Maximum Likelihood Estimator in Phylogenetic Tree Reconstruction.*

Spring 2014, Faculty mentor for Rodrigo Aldana in the undergraduate research project *The random walk of an electrostatic field.*

Summer Schools and Conferences Attended

March 2012, SAMSI Uncertainty Quantification: Models with Complex and Uncertain Domains

March 2009, IMA Hot Topics Workshop: Higher Order Geometric Evolution Equations: Theory and Applications from Microfluidics to Image Understanding.

2008-2009 SAMSI Program on Sequential Monte Carlo Methods.

Awards

First place in the *Dataton for development and social integration in Jalisco* with the team Rocket, 2014.

GSAS MacCracken Support, 2009-2010

Mexican Council of Science and Technology Scholarship, 2005 - 2009.

Mexican Council of Science and Technology Talents Fund Award, 2000-2005.

Skills

C++, MATLAB, R , Lua, python, scientific computing.

Languages: English (fluent), Spanish (native).