Yu-Jui Huang

Contact Information

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Research Areas

Mathematical finance, stochastic control, optimal stopping, applied probability.

Employment

University of Colorado, Boulder, USA
Assistant Professor, Department of Applied Mathematics — **Aug. 2016 onward**

Dublin City University, Dublin, Ireland
Lecturer in Financial Math., School of Mathematical Sciences — **Sep. 2013-Aug. 2016**

Education

University of Michigan, Ann Arbor, USA (2008-2013)

Ph.D., Applied and Interdisciplinary Mathematics — **May 2013**

- **Advisor:** Prof. Erhan Bayraktar
- **Dissertation:** "Topics in Stochastic Control with Applications to Finance"

National Taiwan University, Taipei, Taiwan (2002-2007)

B.S., Mathematics — **June 2007**
B.B.A., Finance — **June 2007**

Grants

National Science Foundation, Division of Mathematical Sciences
Stochastic Games for Intergenerational Equity in Mathematical Finance
DMS-1715439, PI, $186,166 — 2017-2020

Awards

2015 Bruti-Liberati Fellowship
Quantitative Finance Research Centre, University of Technology Sydney

Working Papers

- Martingale Optimal Transport for General Measurable Claims
(with Arash Fahim), first draft in preparation.

Submitted Papers

- Yu-Jui Huang, Shih-Chun Lin, and Yu-Chih Huang (2018)
On Multi-Hypothesis Byzantine Sequential Change Detection
- Yu-Jui Huang and Zhou Zhou (2017)
Optimal Equilibria for Time-Inconsistent Stopping Problems in Continuous Time
- Yu-Jui Huang, Adrien Nguyen-Huu, and Xunyu Zhou (2017)
Stopping Behaviors of Naïve and Non-Committed Sophisticated Agents when They Distort Probability
- Yu-Jui Huang and Zhou Zhou (2017)
Optimal Equilibrium for Time-Inconsistent Stopping Problems – the Discrete-Time Case
- Paolo Guasoni and Yu-Jui Huang (2016)
Healthcare and Consumption with Aging

Publications

- Yu-Jui Huang and Adrien Nguyen-Huu (2017)
Time-consistent Stopping under Decreasing Impatience
Finance and Stochastics, November 2017.

- Xiaoshan Chen, Yu-Jui Huang, Qingshuo Song, and Chao Zhu (2017)
  The Stochastic Solution to a Cauchy Problem for Degenerate Parabolic Equations
  Journal of Mathematical Analysis and Applications, Vol. 451, Issue 1, pp 448-472.
- Arash Fahim and Yu-Jui Huang (2016)
  Model-independent Superhedging under Portfolio Constraints
  Finance and Stochastics, Vol. 20, No. 1, pp. 51–81.
- Erhan Bayraktar, Yu-Jui Huang, and Zhou Zhou (2015)
  On Hedging American Options under Model Uncertainty
  SIAM Journal on Financial Mathematics, Vol. 6, No.1, pp. 425-447.
- Erhan Bayraktar and Yu-Jui Huang (2013)
  Robust Maximization of Asymptotic Growth under Covariance Uncertainty
  Annals of Applied Probability, Vol. 23, No. 5, pp. 1817–1840.
- Erhan Bayraktar and Yu-Jui Huang (2013)
  On the Multi-Dimensional Controller-and-Stopper Games
  SIAM Journal on Control and Optimization, Vol. 51, No. 2, pp. 1263–1297.
- Erhan Bayraktar, Yu-Jui Huang, and Qingshuo Song (2012)
  Outperforming the Market Portfolio with a Given Probability
  Annals of Applied Probability, Vol. 22, No. 4, pp. 1465–1494.

Research Visits

University of Technology Sydney, Sydney, Australia
Quantitative Finance Research Centre — **December 2015**

City University of Hong Kong, Hong Kong, China
Department of Mathematics — **May-June 2013**

Invited Talks (2011-2017)

- *Probability Seminar*
  University of Colorado, Boulder — **November 16, 2017**
- *Mathematical Finance Seminar*
  Columbia University — **November 9, 2017**
- *Seminar on Financial Mathematics*
  National Center for Theoretical Sciences, Taipei, Taiwan — **July 11, 2017**
- *Stochastic Analysis and Financial Mathematics Common*
  Worcester Polytechnic Institute — **March 27, 2017**
- *SIAM Conference on Financial Mathematics and Engineering*
  Austin, Texas — **November 19, 2016**
- *Mathematical Finance Colloquium*
  University of Southern California — **September 26, 2016**
- *Stochastics Seminar*
  National Central University, Taoyuan, Taiwan — **June 3, 2016**
- *Probability Seminar*
  Academia Sinica, Taipei, Taiwan — **May 30, 2016**
- *Mathematical Finance Seminar*
  Boston University — **February 1, 2016**
- *Statistics Seminar*
  University of Toronto — **January 28, 2016**
- *Special Mathematics Departmental Seminar*
  Rutgers University — **January 26, 2016**
- *Nicola Bruti-Liberati Lecture*
  Quantitative Methods in Finance Conference (QMF), Sydney — **December 18, 2015**
- *Special Applied Mathematics Departmental Seminar*

University of Colorado at Boulder **December 1, 2015**

- *Nomura Seminar in Mathematical Finance*
  University of Oxford **June 4, 2015**
- *ORFE Colloquium*
  Princeton University **January 30, 2015**
- *Mathematics Colloquium*
  Florida State University **January 16, 2015**
- *Financial Mathematics Seminar*
  Florida State University **January 15, 2015**
- *Seminar on Probability and Statistics with Applications*
  National Chiao Tung University, Hsinchu, Taiwan **January 5, 2015**
- *One-Day Course in Financial Mathematics*
  National Tsing Hua University, Hsinchu, Taiwan **December 17, 2014**
- *Mathematical Finance Seminar*
  The Hebrew University of Jerusalem **May 26, 2014**
- *Joint Financial Mathematics and Risk Stochastics Seminar*
  London School of Economics **March 3, 2014**
- *Mathematics Colloquium*
  Dublin City University, Dublin, Ireland **October 24, 2013**
- *Probability Seminar*
  Academia Sinica, Taipei, Taiwan **June 27, 2013**
- *Mathematical Finance Seminar*
  University of Texas at Austin **April 12, 2013**
- *AMS Sectional Meeting (Special Session on Financial Mathematics)*
  Boston College, Chestnut Hill **April 7, 2013**
- *Probability and Statistics Seminar*
  Wayne State University, Detroit **March 20, 2013**
- *SIAM Conference on Financial Mathematics and Engineering*
  Minneapolis **July 9 & 10, 2012**
- *Financial and Actuarial Mathematics Seminar*
  University of Michigan **September 29, 2011**
- 7^{th} *International Congress on Industrial and Applied Mathematics (ICIAM)*
  Vancouver **July 21, 2011**

Contributed Presentations (2010-2016)

- 9^{th} *World Congress of the Bachelier Finance Society*
  New York, USA **July 19, 2016**
- 8^{th} *World Congress of the Bachelier Finance Society*
  Brussels, Belgium **June 5, 2014**
- *AMS Sectional Meeting (Special Session on PDE and stochastic Analysis)*
  Temple University, Philadelphia **October 13, 2013**
- *Probability, Control and Finance, a conference in honor of Ioannis Karatzas*
  Columbia University **June 5, 2012**
- *Workshop on Stochastic Analysis in Finance and Insurance*
  University of Michigan **May 18, 2011**
- *Mathematical Finance and Partial Differential Equations Conference*
  Rutgers University **December 10, 2010**
- 6^{th} *World Congress of the Bachelier Finance Society*
  Toronto, Canada **June 23, 2010**

Students

University of Colorado

Ph.D. students:

- Joshua Aurand (Department of Applied Mathematics)
- Saeed Khalili (Department of Mathematics)
- Zhenhua Wang (Department of Mathematics)

Undergraduate research students:

- Trevor McCord on the project "Merton's Problem with Human Capital Investment" (Discovery Learning Apprenticeship Program) **August 2016-April 2017**

Dublin City University

Internship students:

Monitored the progress of internship students in financial firms. Duties include communications/meetings with students and their supervisors, and on-site visits to the companies.

- Michael Flynn, Sean McCarthy, and Thomas Quinn
  @ Office of the Comptroller and Auditor General, Ireland **February-September 2016**
- Adelle Heskin
  @ AIG Asset Management **February-September 2015**
- Damian Murphy and Eoin Phelan
  @ SCOR Global Life Reinsurance Ireland **February-September 2015**
- Jenifer Black
  @ Hannover Re (Ireland) Limited **February-September 2014**

Services

University of Colorado

Department of Applied Mathematics:

- Serving in the Undergraduate Committee **August 2016-May 2017**
- Serving in the Probability/Statistics Preliminary Exam Committee **January 2017**
- Serving in the Applied Analysis Preliminary Exam Committee **August 2017**

Academia

Organizing conferences/symposiums:

- Organize (with Adrien Nguyen-Huu) the minisymposium "Stochastic Control and Stopping under Time Inconsistency" in the SIAM Conference on Financial Mathematics and Engineering (Austin, Texas on November 17-19, 2016).
- Organize (with Arash Fahim) the minisymposium "Robust Hedging and Pricing under Model Uncertainty" in the SIAM Conference on Financial Mathematics and Engineering (Chicago, November 13-15, 2014).

Reviewing journal articles for:

- Annals of Applied Probability.
- Finance and Stochastics.
- Mathematics of Operations Research.
- Nonlinear Analysis: Hybrid Systems.
- SIAM Journal on Control and Optimization.
- SIAM Journal on Financial Mathematics.

Teaching

University of Colorado

- Stochastic Analysis for Finance (Fall 2017)

- *Operations Research* (Spring 2017)
- *Integral Calculus* (Fall 2016, Spring 2017)

Dublin City University

- *Probability and Finance I* (Fall 2015)
  A measure-theoretic probability course for graduate students, with common financial models introduced as applications.
- *Probability I* (Spring 2016, Spring 2015, Spring 2014)
  An introductory probability course for undergraduate students.
- *Data Analysis and Statistics* (Fall 2014)
  A statistics course for biological engineering students, with a focus on analyzing biological and medical data.
- *Statistics I* (Fall 2013)
  An introductory statistics course for undergraduate students.

University of Michigan

- *Integral Calculus* (Fall 2011, Winter 2010).
- *Differential Calculus* (Fall 2009, Winter 2009).
- *Pre-calculus* (Fall 2008).

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