

# ANTONIOS MEIMARIS

Ph.D. Candidate & Teaching Associate - Monash University

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## PERSONAL DETAILS

Citizenship: Greek

Languages: English, Greek, Russian

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## SHORT TERM ACADEMIC APPOINTMENTS

**CE Lecturer - University of Liverpool, Liverpool, UK**

November, 2017

Lecture Topic: *History of Probability & Randomness*

**Visiting Scholar - Columbia University, New York, USA**

May - June, 2017

**Visiting Scholar - Columbia University, New York, USA**

November - December, 2016

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## COLLABORATIONS

Stochastic Engineering Dynamics Lab, Columbia University

2015 - present

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## EDUCATION

**Monash University**, Melbourne, Australia

Doctor of Philosophy, Econometrics & Business Statistics, *Expected award date:* 2019

*Fully funded by Monash University (Fees and Stipend)*

- Thesis: *Closed form path integral based approximate solutions of stochastic differential equations*
- Advisors: Athanasios A. Pantelous, Ph.D (Monash University, Australia),  
Dan Zhu, Ph.D (Monash University, Australia) and  
Ioannis A. Kougiumtzoglou, Ph.D (Columbia University, USA)

**University of Liverpool**, Liverpool, United Kingdom

Doctor of Philosophy, Mathematics, *Started:* October 2016, *Cont. at Monash University*

*Fully funded by EPSRC Doctoral Training Grant (Fees and Stipend)*

- Thesis Topic: *Path integral techniques to stochastic modelling and options pricing*
- Advisors: Athanasios A. Pantelous, Ph.D (University of Liverpool, UK) and  
Ioannis A. Kougiumtzoglou, Ph.D (Columbia University, USA)

Master by Research, Decision Making Under Risk & Uncertainty, 2016

*Fully funded by EPSRC Doctoral Training Grant (Fees and Stipend)*

- *Awarded with distinction*
- Topic: *Some observations on the approximations of the Wiener path integral technique*
- Advisors: Athanasios A. Pantelous, Ph.D (University of Liverpool, UK) and  
Ioannis A. Kougiumtzoglou, Ph.D (Columbia University, USA)

**University of Athens**, Athens, Greece

Diploma, Mathematics, 2015

- *Four-year program*
- Directions: Pure & Applied Mathematics
- Specializations: Computational Mathematics  
Statistics and Operations Research

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## PUBLICATIONS

### Published

- o Konstantinos Liaskos, Athanasios Pantelous, Ioannis Kougiumtzoglou and **Antonios Meimaris**, “Implicit analytic solutions for the linear stochastic partial differential beam equation with fractional derivative terms”, *Systems & Control Letters* 121, (2018): 38-49.
- o **Antonios Meimaris**, Ioannis Kougiumtzoglou and Athanasios Pantelous, “Approximate analytical solutions for a class of nonlinear stochastic differential equations”, *European Journal of Applied Mathematics*, (2018): 1-17.
- o **Antonios Meimaris**, Ioannis Kougiumtzoglou and Athanasios Pantelous, “A closed form approximation and error quantification for the response transition probability density function of a class of stochastic differential equations”, *Probabilistic Engineering Mechanics* 54 (2018): 87-94.
- o **Antonios Meimaris**, Ioannis Kougiumtzoglou and Athanasios Pantelous, “Some observations on the approximations of the Wiener path integral technique”, *Meccanica dei Materiali e delle Strutture* Vol. VI, no.1, (2016): 195-202.

### Submitted

- o **Antonios Meimaris**, Ioannis Kougiumtzoglou and Athanasios Pantelous, “Approximate transition probability density functions for a class of coupled nonlinear stochastic differential equations”, 8<sup>th</sup> CSM conference proceedings, (2018), Under Review.
- o **Antonios Meimaris**, Ioannis Kougiumtzoglou and Athanasios Pantelous, “Closed-form approximate solutions for a class of coupled nonlinear stochastic differential equations”, *Applied Mathematics and Computation*, (2018), Under Review.

### In preparation

- o **Antonios Meimaris**, Vasileios Kontosakos, Athanasios Pantelous and Ioannis Kougiumtzoglou, “Analytical closed-form approximations for continuous time interest rate dynamics”, (2019).
- o **Antonios Meimaris**, Ioannis Kougiumtzoglou, Athanasios Pantelous and Antonina Pirrotta, “Closed-form approximate analytical solutions for time-homogeneous nonlinear stochastic differential equations”, (2019).

### Preprints

**Antonios Meimaris**, “On the additive persistence of a number in base  $p$ ”, (2015).

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## AWARDS

**Teaching Excellence Award (Best Ph.D. Teaching Associate)**, February 2019  
from the Director of Education, Associate Professor Vasilis Sarafidis, including monetary prize, for my teaching at Monash University.

**Teaching Award**, December 2018  
from the Head of Department, Professor Heather Anderson, including monetary prize, for my teaching at Monash University during the academic year 2018.

**Monash Graduate Scholarship (MGS) Grant**, October 2017  
Postgraduate Research Studentship (2018-2021).

**Monash International Tuition Scholarship (MITS) Grant**, October 2017  
Postgraduate International Tuition Studentship (2018-2021).

**EPSRC Centre for Doctoral Training (CDT): Award**, May 2017  
including monetary prize, for a proposed solution to an uncertainty quantification problem (See [Page 7](#)).

<b>EPSRC Centre for Doctoral Training (CDT): Studentship Grant,</b> Postgraduate Research Studentship (2015-2019).	July 2015
<b>Informatics Commendation Award of Athens College,</b> for excellence in information technology.	July 2011
<b>Commendation</b> , on a national level, for participating in the third and final stage of the 23rd Panhellenic Informatics Competition.	March 2011
<b>Commendation</b> , on a national level, for participating in the third and final stage of the 22nd Panhellenic Informatics Competition.	April 2010
<b>Commendation</b> , on an international level, for participating in the XVII International Space Olympics (ISO), Korolev City Moscow, Russia.	October 2009

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## PROFESSIONAL DEVELOPMENT

I will present in the following events:

<i>5th Symposium on Quantitative Finance and Risk Analysis (QFRA 2019)</i> Kos Island, Greece; organised by Monash University, Melbourne, Australia “Approximate closed-form solutions for continuous time derivative pricing”	June 2019
<i>2019 EMI Conference</i> California Institute of Technology, Pasadena, CA, USA “Approximate closed-form solutions for a class of nonlinear stochastic differential equations with applications in engineering dynamics”	June 2019

I have presented in the following events:

<i>Monash Business School Doctoral Colloquium</i> State Library Victoria, Melbourne, Australia “Approximate analytical solutions for a class of nonlinear stochastic differential equations”	November 2018
<i>8<sup>th</sup> International Conference On Computational Stochastic Mechanics (CSM 8)</i> Paros, Greece; organised by Rice University, Houston, TX, USA “Approximate transition probability density functions for a class of coupled nonlinear stochastic differential equations”	June 2018
<i>2018 EMI Conference</i> Massachusetts Institute of Technology (MIT), Boston, MA, USA “Approximate transition probability density functions for a class of nonlinear stochastic differential equations”	June 2018
<i>2017 EMI Conference</i> San Diego, CA, USA “Assessing the accuracy of the Wiener Path Integral technique for a class of stochastic differential equations”	June 2017
<i>2016 EMI International Conference</i> University of Lorraine (Université de Lorraine), Metz, France “Some observations on the approximations of the Wiener path integral technique” *Here I was a keynote speaker	October 2016
<i>Annual Showcase Conference</i> University of Liverpool, Liverpool, United Kingdom “Some observations on the approximations of the Wiener path integral technique” *Here I also presented a poster “Path integral techniques: Applications to financial modelling and options pricing”	September 2016
<i>2nd Symposium on Quantitative Finance and Risk Analysis (QFRA 2016)</i> Rhodes, Greece; organised by University of Liverpool, Liverpool, United Kingdom “Some observations on the approximations of the Wiener path integral technique”	June 2016

I have attended the following events:

<i>CDT Easter School 2017</i> University of Liverpool, Liverpool, United Kingdom	April 2017
<i>NATCOR: Forecasting and Predictive Analytics</i> Lancaster University, Lancaster, United Kingdom	September 2016
<i>3rd BCN(Barcelona) Summer School on Stochastic Analysis</i> Centre de Recerca Matemàtica, Bellaterra, Barcelona, Spain	June-July 2016
<i>NATCOR: Convex Optimization</i> University of Edinburgh, Edinburgh, United Kingdom	June 2016
<i>MIGSAA graduate course on stochastic pathwise integration and stochastic particle systems</i> University of Edinburgh, Edinburgh, United Kingdom	April 2016
<i>CDT Easter School 2016</i> University of Liverpool, Liverpool, United Kingdom	April 2016
<i>13th International Probabilistic Workshop (IPW2015)</i> University of Liverpool, Liverpool, United Kingdom	November 2015
<i>9th Panhellenic Logic Symposium</i> National Technical University of Athens, Athens, Greece	June 2013

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## TEACHING EXPERIENCE

Currently, I am a Teaching Associate at Monash University. In the last semester, I was responsible for the postgraduate unit ETC4130, a course with advanced stochastic calculus elements, and ETC3430 & ETC3530, two applied probability & statistics undergraduate units at Monash University.

In addition, I was a teaching and marking assistant for MATH367, an advanced graph theory course and a teaching assistant for MATH480, an advanced measure-theoretic probability theory course, at the University of Liverpool (2016-2017). I also was a marking assistant for MATH367, in the previous year at the University of Liverpool.

I was a teacher for a two month period in 2015 at Varvakios Pilot School, Greece, organized by the University of Athens, Greece. This placement provides useful experience since it helps prepare the student for teaching large classes, organizing a course, and also gives the student an opportunity to teach a number of lectures.

I have been a teaching regularly since February 2014, in mathematics, with experience in the subjects of (stochastic) calculus, probability & statistics, network theory with applications, algorithms and programming. A full list of courses, which I was responsible for, is presented below.

### **Monash University**

- ETC2430 - Actuarial statistics (Probability & Statistics)
- ETC4130 - Asset liability management (Stochastic Calculus)
- ETC3530 - Contingencies in insurance and pensions (Probability & Statistics)
- ETC3430 - Financial mathematics under uncertainty (Probability & Statistics)

### **University of Liverpool**

- MATH480 - Probability Essentials for Financial Calculus (Stochastic Calculus)
- MATH367 - Networks in Theory and Practice (Graph Theory)

### **University of Athens**

- MATH141 - Computer Science I (Algorithms with MATLAB applications)
- MATH101 - Calculus I (Real Analysis)

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## OTHER WORK EXPERIENCE AND SKILLS

I was an analyst and facilitator for the Bayesian Argumentation via Delphi (BARD), a multi-year project funded by IARPA, organized by Monash University during July-August 2018. BARDs principal investigators include experts in Delphi from the University of Strathclyde and experts in the psychology of causal reasoning from Birkbeck College London and University College London.

I received the Computer Literacy Certificate from the University of Athens, Greece, based on the number of Information Technology modules successfully passed.

I was a programmer responsible with developing Web-based software at Converge - ICT Solutions & Services, Greece during the summer of 2009.

During these years, I have acquired the following technical skills

- **Programming:** L<sup>A</sup>T<sub>E</sub>X, MATLAB, Mathematica and others.
- **Operating Systems:** Apple Mac OS X, Linux, Microsoft Windows, Oracle Solaris and others.
- **Application Software:** Microsoft Office, OpenOffice, TeamViewer and others.

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## VISITS TO INTERNATIONAL RESEARCH CENTERS

Hartree Centre, Science and Technology Facilities Council, UK	May 2016
European Organization for Nuclear Research (CERN), Switzerland	October 2010
Cosmonaut Preparation Center in Korolev City, Russia	October 2009

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## VOLUNTEER SERVICE

Captain of the the Monash University Econometric Game 2019 team, Monash University, Melbourne, Australia.	2018 - 2019
Member of the organizing team of the CDT Easter School 2017, University of Liverpool, Liverpool, UK.	2016 - 2017
Member of the organizing team of the forum of Department of Mathematics, University of Athens, Athens, Greece.	2013 - present
Member of a number of Mathematics study groups (with a variety of subjects) and organizer of one, as a student at the University of Athens, Athens, Greece.	2013 - 2015

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## REFERENCES

Dr Athanasios Pantelous, Associate Professor Monash University, Melbourne, Australia ✉Email: <a href="mailto:Athanasios.Pantelous@monash.edu">Athanasios.Pantelous@monash.edu</a>	Dr Ioannis Kougiumtzoglou, Assistant Professor Columbia University, New York, USA ✉Email: <a href="mailto:ikougium@columbia.edu">ikougium@columbia.edu</a>
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