

# ANDREAS ANASTASIOU

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## EDUCATION

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### University of Oxford

*Oct 2012 - July 2016*

D.Phil. in Statistics

Research Title: 'Bounds for the normal approximation of the maximum likelihood estimator'

Supervisor: Professor Gesine Reinert

### University of Oxford

*Oct 2011 - Sep 2012*

M.Sc. in Applied Statistics

Grade: Distinction (**Top graduate of my year**)

Dissertation Title: 'Some formal aspects of model choice'

Supervisor: Professor Sir David R. Cox

### University of Cyprus

*Sep 2007 - Sep 2011*

B.Sc. in Mathematics and Statistics

Grade: 8.81/10

## ACADEMIC WORK EXPERIENCE

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### University of Cyprus

*August 2019 - date*

*Lecturer (tenure-track) at the Department of Mathematics and Statistics*

### The London School of Economics and Political Science

*July 2016 - April 2019*

*Postdoctoral Research Officer at the Department of Statistics*

Funded by EPSRC Fellowship EP/L014246/1 (New challenges in time series analysis).

Under the guidance of Professor Piotr Fryzlewicz.

### University of Oxford

*Sep 2012 - June 2016*

*Tutor in the Department of Statistics*

Marked students' solutions on problem sheets given every week.

Gave tutorials to help students understand the course.

### University of Oxford

*December 2015*

*Interviewer for undergraduate admissions in Mathematics*

Interviewed final year students to decide whether they were suitable to undertake undergraduate studies in Mathematics at the University of Oxford.

## PUBLICATIONS

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A. ANASTASIOU & R. E. GAUNT (2021+). Wasserstein distance error bounds for the multivariate normal approximation of the maximum likelihood estimator. [arXiv:2005.05208 \[math.ST\]](https://arxiv.org/abs/2005.05208)

In Submission

A. ANASTASIOU, I. CRIBBEN & P. FRYZLEWICZ (2021+). Cross-covariance isolate detect: a new change-point method for estimating dynamic functional connectivity.

In Submission

S. AGAPIOU, A. ANASTASIOU, A. BAXEVANI, T. CHRISTOFIDES, E. CONSTANTINOU, G. HADJIGEORGIOU, C. NICOLAIDES, G. NIKOLOPOULOS, K. FOKIANOS (2021+). Modeling of Covid-19 Pandemic in Cyprus. [arXiv:2010.01927 \[stat.AP\]](https://arxiv.org/abs/2010.01927).

In Submission

- A. ANASTASIOU & P. FRYZLEWICZ (2021+). Detecting multiple generalized change-points by isolating single ones. arXiv:1901.10852 [stat.ME]. In Submission
- A. ANASTASIOU & G. REINERT (2020). Bounds for the asymptotic distribution of the likelihood ratio. *Annals of Applied Probability* **30**:2, 608-643.
- A. ANASTASIOU & R. E. GAUNT (2020). Multivariate normal approximation of the maximum likelihood estimator via the delta method. *Brazilian Journal of Probability and Statistics* **34**:1, 136-149.
- A. ANASTASIOU, K. BALASUBRAMANIAN & M. A. ERDOGDU (2019). Normal Approximation for Stochastic Gradient Descent via Non-Asymptotic Rates of Martingale CLT. *Proceedings of the Conference on Learning Theory (COLT) 2019*.
- A. ANASTASIOU (2018). Assessing the multivariate normal approximation of the maximum likelihood estimator from high-dimensional, heterogeneous data. *Electronic Journal of Statistics* **12**, 3794-3828.
- A. ANASTASIOU & G. REINERT (2017). Bounds for the normal approximation of the maximum likelihood estimator. *Bernoulli* **23**, 191-218.
- A. ANASTASIOU & C. LEY (2017). Bounds for the asymptotic normality of the maximum likelihood estimator using the Delta method. *ALEA, Lat. Am. J. Probab. Math. Stat.* **14**, 153-171.
- A. ANASTASIOU (2017). Bounds for the normal approximation of the maximum likelihood estimator from m-dependent random variables. *Statistics & Probability Letters* **129**, 171-181.

## SOFTWARE

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- A. ANASTASIOU, I. CRIBBEN & P. FRYZLEWICZ (2020). **ccid**: a change-point detection method for estimating dynamic functional connectivity.  $\mathbb{R}$  package.
- A. ANASTASIOU, Y. CHEN, H. CHO & P. FRYZLEWICZ (2020). **breakfast**: Methods for Fast Multiple Change-Point Detection and Estimation.  $\mathbb{R}$  package.
- A. ANASTASIOU & P. FRYZLEWICZ (2018). **IDetect**: Isolate-Detect Methodology for Multiple Change-Point Detection.  $\mathbb{R}$  package.

## RESEARCH GRANTS

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- University of Cyprus start-up grant*. University of Cyprus. €20,000. 2020-2022
- Stein's method and high-dimensional time series analysis*. Heilbronn Focused Research Grant, University of Bristol. £7,500. 2020

## CONFERENCES AND ACADEMIC VISITS

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- Invited by the Research Centre on Interactive Media, Smart Systems and Emerging Technologies (RISE) to give a seminar on change-point detection, Nicosia (Cyprus) *17 September 2020*
- 12<sup>th</sup> International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2019), London (UK). *14-16 December 2019*
- Workshop on Modern Challenges in Spectral Analysis of Time Series, Bristol (UK). *9-11 September 2019*
- 32<sup>nd</sup> European Meeting of Statisticians, Palermo (Italy). *22-26 July 2019*
- 2<sup>nd</sup> Pancyprian Day of Statistics, Nicosia (Cyprus). *7 June 2019*
- Invited by Dr. Andreas Artemiou to give a seminar to the School of Mathematics of the Cardiff University, Cardiff (UK). *8-9 April 2019*

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| Invited by Dr. Robert Gaunt to give a seminar to the School of Mathematics of the University of Manchester, Manchester (UK).   | <i>12-15 February 2019</i>        |
| 11 <sup>th</sup> International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2018), Pisa (Italy).  | <i>14-16 December 2018</i>        |
| Conference on various studies of statistical analysis for asymptotic theory, circular or time series, Nagoya (Japan).  | <i>23-28 October 2018</i>         |
| Workshop on challenges in modern change-point problems, Bristol (UK).  | <i>21-23 August 2018</i>          |
| Workshop on Stein's method and applications in high-dimensional statistics, San Jose, California (USA).  | <i>6-10 August 2018</i>           |
| Joint Statistical Meetings (JSM) 2018, Vancouver (Canada).   | <i>28 July - 2 August 2018</i>    |
| Invited by Dr. Tobias Kley to give a seminar to the School of Business and Economics of Humboldt-Universität zu Berlin, Berlin (Germany).  | <i>18-24 June 2018</i>            |
| Modern Mathematical Methods for Data Analysis Conference, Liege (Belgium).   | <i>4-6 June 2018</i>              |
| Workshop on Data Science Theory and Practice, London (UK).   | <i>27-28 March 2018</i>           |
| 31 <sup>st</sup> European Meeting of Statisticians, Helsinki (Finland).  | <i>24-28 July 2017</i>            |
| Visited Prof. Christophe Ley at Ghent University to start a new collaboration.   | <i>16-25 June 2017</i>            |
| 9 <sup>th</sup> International Conference of the ERCIM Working Group on Computational and Methodological Statistics, Seville (Spain).   | <i>9-11 December 2016</i>         |
| 38 <sup>th</sup> Conference on Stochastic Processes and their Applications, Oxford (UK).   | <i>13-17 July 2015</i>            |
| 30 <sup>th</sup> European Meeting of Statisticians, Amsterdam (Netherlands).   | <i>6-10 July 2015</i>             |
| Invited by Prof. Christophe Ley to give a formal seminar to the European Center for Advanced Research in Economics and Statistics (ECARES), Université libre de Bruxelles, Brussels (Belgium). | <i>8 January-18 February 2015</i> |
| BL-PRO15 Workshop on Probability, Liege (Belgium).   | <i>29-30 January 2015</i>         |
| International Workshop on Applied Probability 2014, Antalya (Turkey).  | <i>16-19 June 2014</i>            |
| 3 <sup>rd</sup> SIAM National Student Chapter Conference, Oxford (UK).   | <i>28 May 2014</i>                |
| Royal Statistical Society 2013 International Conference, Newcastle (UK).   | <i>2-5 September 2013</i>         |
| Week 3 of Academy for PhD Training in Statistics (APTS), Warwick (UK).   | <i>29 July-2 August 2013</i>      |
| Young Statisticians' Meeting YSM2013, Imperial College London (UK).  | <i>4-5 July 2013</i>              |
| Week 2 of Academy for PhD Training in Statistics (APTS), Nottingham (UK).  | <i>15-19 April 2013</i>           |
| 36 <sup>th</sup> Annual Research Students' Conference (RSC) in Probability, Statistics and Social Statistics, Lancaster (UK).  | <i>25-28 March 2013</i>           |
| Week 1 of Academy for PhD Training in Statistics (APTS), Cambridge (UK).   | <i>10-14 December 2012</i>        |
| Oxford Centre for Collaborative and Applied Mathematics (OCCAM) workshop on Networks in Biology, Oxford (UK).  | <i>5 December 2012</i>            |
| 12 <sup>th</sup> National Conference on Mathematical Science and Education, organized by the Cyprus Mathematical Society, Paphos (Cyprus).   | <i>5-7 February 2010</i>          |

## TEACHING EXPERIENCE

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### University of Cyprus

*Sep 2019 - date*

Lecturer for the following modules:

MAS 454 Non-parametric Statistics

*Sep - Dec 2020*

*Sep - Dec 2019*

MAS 051 Statistical Methods

*Jan - May 2021*

*Sep - Dec 2020*

MAS 452 Linear Models II

*Jan - May 2020*

MAS 458 Statistical Data Analysis

*Jan - May 2020*

MAS 468 Topics in Probability and Statistics I

*Jan - May 2020*

MAS 662 Topics in Statistics II

*Sep - Dec 2019*

### University of Oxford

*Oct 2012 - Apr 2016*

Tutor and Teaching Assistant for:

Part C Probability and Statistics for Network Analysis

*Oct - Dec 2015*

*Oct - Dec 2014*

*Oct - Dec 2012*

Part A Simulation and Statistical Programming

*Jan - Apr 2015*

*Jan - Apr 2014*

*Jan - June 2013*

Part B Foundations of Statistical Inference

*Oct - Dec 2013*

Part B Applied Probability

*Oct - Dec 2012*

## RESEARCH ASSISTANTS AND SUPERVISION

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### Research assistants

Aggelos Papanastasiou funded by my start-up grant (“Advances on change-point detection and asymptotic statistics”).

2020-2022

### Supervision of graduate students

Panos Mougios with an M.Sc. thesis on “Comparing sampling methods for machine learning”.

2020

## EXTERNAL PROFESSIONAL COMMITMENTS

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### Regular review service to professional journals

Journal of the Royal Statistical Society, Series B (JRSSb)

Journal of the American Statistical Association (JASA)

Biometrika

Statistics and Computing

Journal of Theoretical Probability

The Annals of the Institute of Statistical Mathematics

Computational Statistics & Data Analysis

Statistics & Probability Letters

Econometrics and Statistics

Journal of the Korean Statistical Society  
 Communications in Statistics - Theory and Methods  
 Scientia Iranica

### External examining

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|---|------|
| Brecht Dewilde (Department of Applied Mathematics, Computer Science and Statistics, Ghent University) with M.Sc. thesis title “Predicting the Olympic marathon: A machine learning oriented approach” | 2020 |
| Chrysovalantis Christodoulou (Department of Computer Science, University of Cyprus) with M.Sc. thesis title “Fake News Evolution - Linguistic Characteristics”  | 2020 |
| Panagiotis Maouris (Department of Mathematics and Statistics, University of Cyprus) with B.Sc. thesis title “Tests for equality of variances”   | 2020 |

### HONORS AND AWARDS

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| Teaching Assistantship Bursary for my D.Phil. studies, Department of Statistics, University of Oxford.   | 2012-2016 |
| EPSRC Studentship for my D.Phil. studies, University of Oxford.  | 2012-2016 |
| A.G. Leventis Foundation Scholarship for my D.Phil. studies.   | 2012-2015 |
| Jesus College Oxford Graduate Scholarship.   | 2013-2015 |
| Best Poster Award at the 36 <sup>th</sup> annual Research Students’ Conference in Probability, Statistics and Social Statistics (University of Lancaster). | 2013      |
| Gutiérrez Toscano Prize for the best performance in the M.Sc. in Applied Statistics, Department of Statistics, University of Oxford.                       | 2012      |
| Fourth highest overall grade (out of 7000 soldier applicants) in the National Military examinations for acceptance in the Cadet Officers body.             | 2005      |
| Top graduate, Palouriotissa Lyceum.  | 2005      |
| First place in the EUROQUIZ - National knowledge competition.  | 2005      |

### NON-ACADEMIC WORK EXPERIENCE

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|---|--------------------------------|
| <b>PricewaterhouseCoopers (PwC) Limited, Cyprus</b><br><i>Summer Intern, Assurance Department</i> | <i>June - July 2009</i>        |
| Assisted in audit procedures and typed summaries of Meetings of Directors.                        |                                |
| <b>Pulse Limited, Cyprus</b><br><i>Summer Intern, Statistical Service</i>                         | <i>July - August 2008</i>      |
| Filled in questionnaires and analysed the results for the needs of statistical researches.        |                                |
| <b>Cyprus National Guard, Nicosia</b><br><i>Cadet - High Ranking Officer of Artillery</i>         | <i>July 2005 - August 2007</i> |
| I was responsible of a cohort consisted of about 20 soldiers.                                     |                                |

## FURTHER SKILLS

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### Language Skills

- Greek: Native language
- English: Fluent

### IT and Computer Skills

- Operating Systems: Windows, Mac
- Programming Languages: R, MATLAB, Fortran
- Communications: LaTeX and Microsoft Office

## COMMITTEES

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- Representative of Cyprus in the Board of the European Courses in Advanced Statistics. *2018-date*
- Curator of the video collection of the Bernoulli Society. *2019-date*
- Member of the Cyprus Statistical Society. *2018-date*
- Member of the Oxford Union. *2011-date*
- Research Officers' representative, London School of Economics. *2016-2019*
- Member of Equity, Diversity and Inclusion (Athena SWAN) committee, Department of Statistics, London School of Economics. *2016-2019*
- Member of the Green Impact committee, Department of Statistics, London School of Economics. *2016-2019*
- Member of the executive board of *OXygono*, which is a think tank based in Cyprus. *2014-2020.*
- Statistics representative, Oxford University SIAM Student Chapter. *2012-2014*
- Member of the Oxford University SIAM Student Chapter. *2011-2016*