

ANDREAS ANASTASIOU

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EDUCATION

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 the 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

University of Cyprus *January 2024 - date*

Assistant Professor at the Department of Mathematics and Statistics

University of Cyprus *August 2019 - December 2023*

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 *September 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

1. A. ANASTASIOU & T. KLEY (2024). Wasserstein distance bounds on the normal approximation of empirical autocovariances and cross-covariances under non-stationarity and stationarity. *Journal of Time Series Analysis*, **45**:3.
2. C. PANTELI, M. STYLIANOU, A. ANASTASIOU & C. ANDREOU (2024). Gas-Phase Detection of UTI-causing Bacteria using Off-the-Shelf Gas Sensors and Change-Point Detection. *IEEE Sensors*, *doi: 10.1109/JSEN.2024.3402828*

3. A. ANASTASIOU & I. CRIBBEN (2024). Contribution to the Discussion of ‘the Discussion Meeting on Probabilistic and statistical aspects of machine learning’. *Journal of the Royal Statistical Society Series B: Statistical Methodology*, **86**:2, 313-314.
4. A. ANASTASIOU & A. PAPANASTASIOU (2023). Generalized multiple change-point detection in the structure of multivariate, possibly high-dimensional, data sequences. *Statistics and Computing*, **33**:94.
5. N. PETROU, C. CHRISTODOULOU, A. ANASTASIOU, G. PALLIS & M. DIKAIAKOS (2023). A Multiple change-point detection framework on linguistic characteristics of real versus fake news articles. *Scientific Reports*, **13**, Article no: 6086.
6. J. ALVAREZ-GALVEZ, A. ANASTASIOU, D. LAMNISOS, M. CONSTANTINO, C. NICOLAOU, S. PAPACOSTAS, V. S. VASSILIOU, L. MCHUGH, J. LUBENKO, F. J. RUIZ, M. PAEZ-BLARRINA, F. MONTESINOS, S. VALDIVIA-SALAS, R. M. MERWIN, M. KAREKLA, A. T. GLOSTER & A. P. KASSIANOS (2023). The impact of government actions and risk perception on the promotion of self-protective behaviors during the COVID-19 pandemic. In submission
7. A. ANASTASIOU, A. BARP, F-X. BRIOL, B. EBNER, R. E. GAUNT, F. GHADERINEZHAD, J. GORHAM, A. GRETTON, C. LEY, Q. LIU, L. MACKEY, C. J. OATES, G. REINERT & Y. SWAN (2023). Stein’s Method Meets Computational Statistics: A Review of Some Recent Developments. *Statistical Science* **30**:1, 120-139.
8. A. ANASTASIOU, I. CRIBBEN & P. FRYZLEWICZ (2022). Cross-covariance isolate detect: A new change-point method for estimating dynamic functional connectivity. *Medical Image Analysis* **75**
9. A. ANASTASIOU & P. FRYZLEWICZ (2022). Detecting multiple generalized change-points by isolating single ones. *Metrika* **85**, 141-174.
10. A. ANASTASIOU & R. E. GAUNT (2021). Wasserstein distance error bounds for the multivariate normal approximation of the maximum likelihood estimator. *Electronic Journal of Statistics* **15**:2, 5758-5810.
11. S. AGAPIOU, A. ANASTASIOU, A. BAXEVANI, C. NICOLAIDES, G. HADJIGEORGIOU, T. CHRISTOFIDES, E. CONSTANTINO, G. NIKOLOPOULOS & K. FOKIANOS (2021). Modeling the first wave of Covid-19 pandemic in the Republic of Cyprus. *Scientific Reports* **11**, Article number: 7342
12. A. ANASTASIOU & G. REINERT (2020). Bounds for the asymptotic distribution of the likelihood ratio. *Annals of Applied Probability* **30**:2, 608-643.
13. 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.
14. 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*.
15. A. ANASTASIOU (2018). Assessing the multivariate normal approximation of the maximum likelihood estimator from high-dimensional, heterogeneous data. *Electronic Journal of Statistics* **12**:2, 3794-3828.
16. 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.
17. A. ANASTASIOU (2017). Bounds for the normal approximation of the maximum likelihood estimator from m-dependent random variables. *Statistics & Probability Letters* **129**, 171-181.
18. A. ANASTASIOU & G. REINERT (2017). Bounds for the normal approximation of the maximum likelihood estimator. *Bernoulli* **23**, 191-218.

SOFTWARE

- A. ANASTASIOU, I. CRIBBEN & P. FRYZLEWICZ (2021). **ccid**: a change-point detection method for estimating dynamic functional connectivity. R package.
- A. ANASTASIOU, Y. CHEN, H. CHO & P. FRYZLEWICZ (2020). **breakfast**: Methods for Fast Multiple Change-Point Detection and Estimation. R package.
- A. ANASTASIOU & P. FRYZLEWICZ (2018). **IDetect**: Isolate-Detect Methodology for Multiple Change-Point Detection. R package.

FUNDING

- Surface-Enhanced Raman Scattering (SERS) effect of nanoparticles, primarily gold, silver, and their combinations, to advance Point-Of-Care Testing technology.*
Onisilos Marie Skłodowska-Curie Actions (MSCA) Cofund 2020. Co-PI, €147,120. 2023-2025
- SepsISensor: Sepsis Diagnosis via Integrated Breath Sensing System with Change-Point Detection for Real-Time Point-of-Care.*
European Commission Marie Skłodowska-Curie Actions. Co-PI, €148,000. 2022-2024
- University of Cyprus start-up grant.* University of Cyprus. PI, €20,000 2020-2022
- Stein's method and high-dimensional time series analysis*
Heilbronn Focused Research Grant, University of Bristol. £7,500. 2020

SUPERVISION

PhD students

Sophia Loizidou (co supervised with Prof. Christophe Ley) with a research project on “Flexible modelling for hyper-toroidal data”. 2023-date

Master students

Sophia Loizidou with a research project on “A novel approach on offline change-point detection”. 2022

Panos Mougios with an M.Sc. thesis on “Comparing sampling methods for machine learning”. 2020

Research assistants

Sophia Loizidou funded by my start-up grant (“Advances on change-point detection and asymptotic statistics”). 2021-2022

Aggelos Papanastasiou funded by my start-up grant (“Advances on change-point detection and asymptotic statistics”). 2020-2021

RECENT CONFERENCES AND ACADEMIC VISITS

The Bernoulli-IMS 11th World Congress in Probability and Statistics, Bochum (Germany), 12-16 August 2024

The 2024 Joint Statistical Meetings (JSM 2024), Portland, Oregon (USA), 3-8 August 2024

Workshop on Stein's Method and Networks, Oxford (UK), 20-21 June 2024

The 12th International Chinese Statistical Association (ICSA) International Conference, Hong Kong, 7-9 July 2023

The 34th European Meeting of Statisticians (EMS 2023), Warsaw (Poland), *3-7 July 2023*

Invited by the Greek Statistical Institute to give a Series of Lectures
at the University of Athens (Greece). *22-25 May 2023*

Invited by Prof. Christophe Ley to give a formal seminar to the Department
of Mathematics and Statistics of the University of Luxembourg (Luxembourg). *28 June-4 July 2022*

International Symposium on Nonparametric Statistics (ISNPS 2022),
Paphos (Cyprus). *20-24 June 2022*

14th International Conference of the ERCIM WG on Computational
and Methodological Statistics (CMStatistics 2021), London (UK). *18-20 December 2021*

Invited by the Department of Commerce, Finance and Shipping of the
Cyprus University of Technology to give a talk in their organised seminar
on Econometrics and Statistics, Limassol (Cyprus) *8 November 2021*

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*

12th 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*

32nd European Meeting of Statisticians, Palermo (Italy). *22-26 July 2019*

2nd 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*

Invited by Dr. Robert Gaunt to give a seminar to the School of Mathematics
of the University of Manchester, Manchester (UK). *12-15 February 2019*

11th International Conference of the ERCIM WG on Computational
and Methodological Statistics (CMStatistics 2018), Pisa (Italy). *14-16 December 2018*

Conference on various studies of statistical analysis for asymptotic theory,
circular or time series, Nagoya (Japan). *23-28 October 2018*

Workshop on challenges in modern change-point problems, Bristol (UK). *21-23 August 2018*

Workshop on Stein's method and applications in high-dimensional statistics,
San Jose, California (USA). *6-10 August 2018*

Joint Statistical Meetings (JSM) 2018, Vancouver (Canada). *28 July - 2 August 2018*

Invited by Dr. Tobias Kley to give a seminar to the School of Business and
Economics of Humboldt-Universität zu Berlin, Berlin (Germany). *18-24 June 2018*

Modern Mathematical Methods for Data Analysis Conference, Liege (Belgium). *4-6 June 2018*

Workshop on Data Science Theory and Practice, London (UK). *27-28 March 2018*

TEACHING EXPERIENCE

University of Cyprus

Sep 2019 - date

Lecturer for the following modules:

DSC 531 Statistical Simulations and Data Analysis

Sep - Dec 2024

Sep - Dec 2023

Sep - Dec 2022

Sep - Dec 2021

MAS 454 Non-parametric Statistics

Sep - Dec 2024

Sep - Dec 2023

Sep - Dec 2022

Sep - Dec 2021

Sep - Dec 2020

Sep - Dec 2019

DSC 573 Research Project for the M.Sc. in Data Science

Sep - Dec 2022

MAS 051 Statistical Methods

Jan - May 2021

Sep - Dec 2020

MAS 452 Linear Models II

Jan - May 2022

Jan - May 2020

MAS 458 Statistical Data Analysis

Jan - May 2024

Jan - May 2023

Jan - May 2020

MAS 468 Topics in Probability and Statistics I

Jan - May 2020

MAS 667 Statistical Project

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

EXTERNAL PROFESSIONAL COMMITMENTS

Associate Editor

Computational Statistics & Data Analysis

Regular review service to professional journals

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

Journal of the American Statistical Association (JASA)

Journal of Business and Economic Statistics (JBES)

Biometrika

Statistics and Computing

Journal of Theoretical Probability

Statistical Papers
The Annals of the Institute of Statistical Mathematics
Computational Statistics & Data Analysis
Statistics & Probability Letters
Econometrics and Statistics
Journal of Econometrics
Journal of the Korean Statistical Society
Metrika
METRON
Communications in Statistics - Theory and Methods
Scientia Iranica

External examining

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

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 36th 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

CONSULTING AND NON-ACADEMIC WORK EXPERIENCE

Bank of Cyprus Cultural Foundation (BCCF) December 2021 - May 2022
Statistical consultant for the European Programme “ReInHerit”, for which BCCF has acquired funding through the Horizons 2020 scheme.

I have prepared a complete statistical analysis of real data collected from questionnaires. This has been achieved through an extensive writing of relevant functions using the programming language R. Furthermore, the results of the analysis have been disseminated and presented to the various partners of the project.

PricewaterhouseCoopers (PwC) Limited, Cyprus

June - July 2009

Summer Intern, Assurance Department

Assisted in audit procedures and typed summaries of Meetings of Directors.

Pulse Limited, Cyprus

July - August 2008

Summer Intern, Statistical Service

Filled in questionnaires and analysed the results for the needs of statistical surveys.

FURTHER SKILLS

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

- Member of the Board of the Cyprus Statistical Society. *2022-date*
- 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 Executive Committee of the Oxford University Society Cyprus. *2018-2023*
- 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*