

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 AND PREPRINTS

1. A. ANASTASIOU, C. LEY & S. LOIZIDOU (2025+). Construction of optimal tests for symmetry on the torus and their quantitative error bounds. *In submission*
2. A. ANASTASIOU & P. FRYZLEWICZ (2025+). Non-parametric multiple change-point detection. *In submission*
3. A. ANASTASIOU & I. CRIBBEN (2025+). Tensor time series change-point detection in cryptocurrency network data. *To appear in the Journal of the Royal Statistical Society, Series A (Statistics in Society).*

4. A. ANASTASIOU & S. LOIZIDOU (2025). Data-adaptive structural change-point detection via isolation. *Statistics and Computing*, **35**:117.
5. A. F. LODEIRO, M. STAVROU, M. CONSTANTINOU, A. MICHANIKOU, A. ANASTASIOU & C. ANDREOU (2025). Chemical Change-Point Detection on a Silver Nanoplate Substrate. *Proceedings of the IEEE 25th International Conference on Nanotechnology (NANO)*.
6. 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.
7. 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**
8. 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.
9. 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.
10. N. PETROU, C. CHRISTODOULOU, A. ANASTASIOU, G. PALLIS & M. DIKAIKOS (2023). A Multiple change-point detection framework on linguistic characteristics of real versus fake news articles. *Scientific Reports*, **13**, Article no: 6086.
11. J. ALVAREZ-GALVEZ, A. ANASTASIOU, D. LAMNISOS, M. CONSTANTINOU, 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. *PLOS ONE* 18(4): e0284433.
12. 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.
13. C. PANTELI, M. STYLIANOU, A. ANASTASIOU & C. ANDREOU (2023). Rapid Detection of Bacterial Infection Using Gas Phase Time Series Analysis. *Proceedings of the IEEE SENSORS 2023 Conference*.
14. 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**
15. A. ANASTASIOU & P. FRYZLEWICZ (2022). Detecting multiple generalized change-points by isolating single ones. *Metrika* **85**, 141-174.
16. 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.
17. S. AGAPIOU, A. ANASTASIOU, A. BAXEVANI, C. NICOLAIDES, G. HADJIGEORGIOU, T. CHRISTOFIDES, E. CONSTANTINOU, G. NIKOLOPOULOS & K. FOKIANOS (2021). Modeling the first wave of Covid-19 pandemic in the Republic of Cyprus. *Scientific Reports* **11**, Article number: 7342
18. A. ANASTASIOU & G. REINERT (2020). Bounds for the asymptotic distribution of the likelihood ratio. *Annals of Applied Probability* **30**:2, 608-643.
19. 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.

20. 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*.
21. 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.
22. 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.
23. A. ANASTASIOU (2017). Bounds for the normal approximation of the maximum likelihood estimator from m-dependent random variables. *Statistics & Probability Letters* **129**, 171-181.
24. 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

1. *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
2. **SepsISensor**: Sepsis Diagnosis via Integrated Breath Sensing System with Change-Point Detection for Real-Time Point-of-Care.
European Commission Marie Skłodowska-Curie Actions.
Member of committee of research topic experts, €148,000. 2022-2024
3. *University of Cyprus start-up grant.* University of Cyprus. PI, €20,000. 2020-2022
4. *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
- Panagiotis Maouris (co supervised with Prof. Efstathios Paparoditis) with a research project on “Time Series Analysis, Bootstrapping, and Change-point Detection”. 2024-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

DSSV2025 – Data Science Statistics & Visualisation 2025, Kruger Park (South Africa).	7-9 July 2025
Invited by Dr. Tobias Kley to give a seminar to the Institute of Mathematical Stochastics, University of Göttingen, Göttingen (Germany).	1-9 April 2025
Invited by Prof. Christophe Ley to give a formal seminar to the Department of Mathematics and Statistics of the University of Luxembourg (Luxembourg).	4-13 March 2025
The Bernoulli-IMS 11 th 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
14 th 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
12 th 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 nd European Meeting of Statisticians, Palermo (Italy).	22-26 July 2019
2 nd 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).	<i>12-15 February 2019</i>
11 th 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>

HONORS AND AWARDS

Shortlisted for the University of Cyprus teaching award.	<i>2024</i>
Teaching Assistantship Bursary for my D.Phil. studies, Department of Statistics, University of Oxford.	<i>2012-2016</i>
EPSRC Studentship for my D.Phil. studies, University of Oxford.	<i>2012-2016</i>
A.G. Leventis Foundation Scholarship for my D.Phil. studies.	<i>2012-2015</i>
Jesus College Oxford Graduate Scholarship.	<i>2013-2015</i>
Best Poster Award at the 36 th annual Research Students' Conference in Probability, Statistics and Social Statistics (University of Lancaster).	<i>2013</i>
Gutiérrez Toscano Prize for the best performance in the M.Sc. in Applied Statistics, Department of Statistics, University of Oxford.	<i>2012</i>
Fourth highest overall grade (out of 7000 soldier applicants) in the National Military examinations for acceptance in the Cadet Officers body.	<i>2005</i>
Top graduate, Palouriotissa Lyceum.	<i>2005</i>
First place in the "EUROQUIZ" - National knowledge competition.	<i>2005</i>

TEACHING EXPERIENCE

University of Cyprus	<i>Sep 2019 - date</i>
Lecturer for the following modules:	
DSC 531 Statistical Simulations and Data Analysis	<i>Sep - Dec 2024</i>
	<i>Sep - Dec 2023</i>
	<i>Sep - Dec 2022</i>
	<i>Sep - Dec 2021</i>
MAS 454 Non-parametric Statistics	<i>Sep - Dec 2024</i>
	<i>Sep - Dec 2023</i>
	<i>Sep - Dec 2022</i>

	<i>Sep - Dec 2021</i>
	<i>Sep - Dec 2020</i>
	<i>Sep - Dec 2019</i>
DSC 573 Research Project for the M.Sc. in Data Science	<i>Sep - Dec 2022</i>
MAS 051 Statistical Methods	<i>Jan - May 2021</i>
	<i>Sep - Dec 2020</i>
MAS 452 Linear Models II	<i>Jan - May 2022</i>
	<i>Jan - May 2020</i>
MAS 458 Statistical Data Analysis	<i>Jan - May 2024</i>
	<i>Jan - May 2023</i>
	<i>Jan - May 2020</i>
MAS 468 Topics in Probability and Statistics I	<i>Jan - May 2020</i>
MAS 667 Statistical Project	<i>Jan - May 2020</i>
MAS 662 Topics in Statistics II	<i>Sep - Dec 2019</i>

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

2021-2024

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, Electronic Journal of Statistics, Statistics and Computing, Journal of Nonparametric Statistics, Journal of Applied Statistics, Journal of Theoretical Probability, Scientific Reports, 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, Statistics in Medicine, Metrika, Communications in Statistics - Theory and Methods.

External examining

Platonas Michailidis (Department of Mathematics and Statistics, University of Cyprus)
with B.Sc. thesis title “Distributed Methods in Bayesian Nonparametric
Regression using Oversmoothed Heavy-Tailed Priors”.

2024

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

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.

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*