

## Andreas Artemiou

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**Date of birth:** March, 11<sup>th</sup>, 1981

**Citizenship:** Cyprus

**Nationality:** Cyprus (Greek-Cypriot)

### **Employment History:**

- August 2019 – today: Senior Lecturer of Statistics at the School of Mathematics at Cardiff University.
  - Other roles:
    - Deputy Director of Data Science Academy
    - CU/ONS partnership Theme Lead “Skills and Education”
    - Director of Postgraduate Taught Programs
    - Director of the MSc in Data Science and Analytics
    - Director of the MSc in Data Science for Government
    - Data Innovation Academy Academic co-Investigator.
- September 2013 – July 2019: Permanent (“tenured”) Lecturer of Statistics at the School of Mathematics at Cardiff University.
- August 2010 – August 2013: Tenure track Assistant Professor of Statistics, Department of Mathematical Sciences, Michigan Technological University.
- September 2012 – May 2013: SAMSI - New Researcher Fellow for the Program on “Statistical and Computational Methodology for Massive Datasets”.

### **Studies:**

- Ph.D. in Statistics, Pennsylvania State University, August 2010
  - Dissertation: “**Topics on Supervised and Unsupervised dimension reduction**” supervised by Professor Bing Li (citations: 2)
- M.Sc. in Statistics, Pennsylvania State University, May 2008
  - Master thesis: “**Principal Components and regression: A probabilistic explanation of a natural phenomenon**” supervised by Professor Bing Li
- B.Sc. in Mathematics and Statistics with a minor in Computer Science, University of Cyprus, June 2005
  - B.Sc. Final project: “**Biostatistical analysis of interval censored and truncated data in frailty models**” supervised by Dr. Filia Vonta

### **Research Interests:**

- Supervised and Unsupervised Dimension Reduction
- Data and text mining / Support Vector Machines
- Statistical / Machine Learning / Kernel methods

- Applications of Dimension reduction techniques in other Sciences

## **Peer Reviewed Publications:** (citations per google scholar)

### Published in Statistics and related Journals:

- Luke Smallman and Andreas Artemiou (accepted December 2021) “**A literature review of (sparse) exponential family PCA**”, Journal of Statistical Theory and Practice
- Eugen Pircalabelu and Andreas Artemiou (accepted July 2021) “**Graph informed sliced inverse regression**”, Computational Statistics and Data Analysis
- Eliana Christou, Annabel Settle and Andreas Artemiou (accepted March 2021) “**Nonlinear Dimension Reduction for Conditional Quantiles**”, Advances in Data Analysis and Classification
- Ben Jones and Andreas Artemiou (accepted December 2020) “**Revisiting the predictive power of kernel principal components**”, Statistics and Probability Letters. (citations: 1)
- Andreas Artemiou, Yuexiao Dong and Seung-Jun Shin (accepted November 2020). “**Real-time sufficient dimension reduction through principal least squares support vector machines**”, Pattern Recognition. (citations: 2)
- Kimon Ntotsis, Alex Karagrigoriou and Andreas Artemiou (accepted December 2021) “**Interdependency pattern recognition in Econometrics: A penalized regularization antidote**”, Econometrics MDPI, 9, 44
- Hayley Randall, Andreas Artemiou and Xingye Qiao (2021) “**Sufficient Dimension Reduction based on Distance-Weighted Discrimination**”, Scandinavian Journal of Statistics, 48, 1186-1211. (citations: 1)
- Andreas Artemiou (2021) “**Using mutual information to measure the predictive potential of principal components**”, In Festschrift in Honor of R. Dennis Cook by Springer. Fifty Years of Contribution to Statistical Science (edited by Efsthathia Bura and Bing Li), Springer, 1-15. (citations: 1)
- Stephen Babos and Andreas Artemiou (2021). “**Cumulative Median Estimation for Sufficient Dimension Reduction**”, Stats (Special Issue: Robust Statistics in Action), 4, 138-145. (featured on front page)
- Stephen Babos and Andreas Artemiou (2020) “**Sliced Inverse Median Difference Regression**”, Statistical Methods and Applications, 29, 937-954 (citations: 3)
- Luke Smallman, William Underwood and Andreas Artemiou (2020) “**Simple Poisson PCA: An algorithm for (sparse) feature extraction with simultaneous dimension determination**”, Computational Statistics, 35, 559-577 (citations: 6)
- Ben Jones and Andreas Artemiou (2020) “**On principal component regression with Hilbertian predictors**”, Annals of the Institute of Statistical Mathematics, 72, 627-644 (citations: 4)
- Ben Jones, Andreas Artemiou and Bing Li (2020) “**On the predictive potential of kernel principal components**”, Electronic Journal of Statistics, 14, 1-23. (citations: 2)
- Lowri Williams, Michael Arribas-Ayllon, Andreas Artemiou and Irena Spasic (2019). “**Comparing the utility of different classification schemes for emotive language analysis**”, Journal of Classification, 36, 619-648. (citations: 4)
- Andreas Artemiou (2019) “**Cost-based reweighting for Principal LqSVM for sufficient dimension reduction**”, Journal of Mathematics and Statistics –

Science Publications (Special Edition on Statistical Modelling with applications), 15, 218-224.

- Andreas Artemiou (2019). “**Using adaptively weighted large margin classifiers for robust sufficient dimension reduction**”, *Statistics*, 53, 1037-1051. (citations: 3)
- Jennifer Morgan, Paul Harper, Vince Knight, Andreas Artemiou, Alex Carney and Andrew Nelson (2019) “**Determining patient outcomes from patient letters: A comparison of text analysis approaches**”, *Journal of the OR Society*, 70, 1425-1439.
- Luke Smallman, Andreas Artemiou and Jennifer Morgan (2018) “**Sparse Generalised Principal Component Analysis**”, *Pattern Recognition*, 83, 443-455. (citations: 13)
- Ahmad Alothman, Yuexiao Dong and Andreas Artemiou (2018) “**On dual model-free variable selection with two groups of variables**”, *Journal of Multivariate Analysis*, 167, 366-377.
- Seung-Jun Shin and Andreas Artemiou (2017) “**Penalized Principal Logistic Regression for Sparse Sufficient Dimension Reduction**”, *Computational Statistics and Data Analysis*, 111, 48-58 (citations: 15)
- Luke Smallman and Andreas Artemiou (2017) “**A Study on Imbalance Support Vector Machine Algorithms for Sufficient Dimension Reduction**”, *Communications in Statistics, Theory and Methods*, 46, 2751-2763. (citations: 7)
- Andreas Artemiou and Yuexiao Dong (2016) “**Sufficient dimension reduction via principal  $L_q$  support vector machine**”, *Electronic Journal of Statistics*, 10, 783-805. (citations: 12)
- Andreas Artemiou and Lipu Tian (2015) “**Using Sliced Inverse Mean Difference for Sufficient Dimension Reduction**”, *Statistics and Probability Letters*, 106, 184-190. (citations: 7)
- Krystalleni Drosou, Andreas Artemiou and Christos Koukouvinos (2015) “**A comparative study of the use of large margin classifiers on seismic data**”, *Journal of Applied Statistics*, 42, 180-201.
- Andreas Artemiou and Min Shu (2014) “**A Cost Based Reweighted scheme of Principal Support Vector Machine**”, *Topics in Nonparametric Statistics, Springer Proceedings in Mathematics and Statistics*, 74, 1-22. (citations: 10)
- Andreas Artemiou (2014) “**Applications of Sufficient Dimension Reduction on non-elliptical data**”, *Journal of the Indian Society of Agricultural Statistics*, 68, 273-283 (Special issue on Statistical and Computational Methodologies on Massive Datasets)
- Andreas Artemiou and Bing Li (2013), “**Predictive power of principal components for single-index model and sufficient dimension reduction**”, *Journal of Multivariate Analysis*, 119, 176-184. (citations: 14)
- Bing Li, Andreas Artemiou and Lexin Li (2011), “**Principal support vector machine for linear and nonlinear sufficient dimension reduction**”, *Annals of Statistics*, 39, 3182-3210 (citations: 94)
- Andreas Artemiou and Bing Li (2009), “**On principal components and regression: A statistical explanation of a natural phenomenon**”, *Statistica Sinica*, 19, 1557-1565. (citations: 35)
- Filia Vonta and Andreas Artemiou (2007), “**Hypothesis testing in frailty models for arbitrary censored and truncated data**”, *CDQM*, 10(1): 110-121 (citations: 3)

Published in Journals in other Sciences:

- Ross Burton, Raya Ahmed, Simone M. Cuff, Sarah Baker, Andreas Artemiou, Matthias Eberl (accepted May 2021) “**CytoPy: an autonomous cytometry analysis framework**”, PLOS Computational Biology (citations: 2)
- Mark J Ponsford, Ross J Burton, Leitchan Smith, Palwasha Khan, Robert Andrews, Simone Cuff, Laura Tan, Matthias Eberl, Ian R Humphreys, Farbod Babolhavaeji, Andreas Artemiou, Manish Pandey, Stephen Jolles and Jonathan Underwood (accepted January 2021) “**Examining the utility of extended laboratory panel testing in the Emergency Department for risk-stratification of patients with COVID-19: a single centre retrospective service evaluation**”, Journal of Clinical Pathology.(citations:2)
- Irena Spasic, David Owen, Dawn Knight and Andreas Artemiou (2019) “**Unsupervised multi-word term recognition in Welsh**”, In proceedings of the “Celtic Language Technology Workshop” CLTW2019, Dublin, Ireland, pages 1-6. (citations: 2)
- Timothy Vivian-Griffiths, Emily Baker, Karl M Schmidt, Matthew Bracher-Smith, James Walters, Andreas Artemiou, Peter Holmans, Michael C. O’Donovan, Michael J. Owen, Andrew Pocklington, Valentina Escott-Price (2019) “**Predictive modelling of Schizophrenia from genomic data: comparison of Polygenic Risk Score with Kernel Support Vector Machines approach**”, American Journal of Medical Genetics Part B: Neuropsychiatric Genetics, 180B, 80-85. (citations: 15)
- Dimitris Challoumas and Andreas Artemiou (2018) “**Predictors of attack performance in high-level male volleyball players**”, International Journal of Sports Physiology and Performance, 13, 1230-1236. (citations: 26)
- Dimitris Challoumas, Andreas Artemiou and Georgios Dimitrakakis (2017). “**Dominant vs non-dominant shoulder morphology in volleyball players and associations in pathology and spike speed**”, Journal of Sports Sciences, 35, 65-73. (citations: 17)
- Soumya K. Shrivastava, Andreas Artemiou and Adrienne R. Minerick (2011) “**DC insulator-based dielectrophoretic characterization of erythrocytes: ABO-Rh human blood typing**”, Electrophoresis, 32, 2530-2540 (citations: 81)

Peer reviewed contributions to larger publications (books, encyclopedia etc):

- Andreas Artemiou “**Regression Analysis**” Contributed Essay to *Encyclopedia on Social Network Analysis and Mining*, Editors: Reda Alhajj, Jon Rokne, Springer (2014 - reprinted 2016).

Preprints:

- Ross Burton, Raya Ahmed, Simone Cuff, Andreas Artemiou and Matthias Eberl (2020) “**Cytopy: an autonomous cytometry analysis framework**”, bioRxiv doi.org/10.1101/2020.04.08.031898 (submitted also for publication April 2020)

*Submitted:*

- Joni Virta and Andreas Artemiou “Poisson PCA for matrix count data” (submitted November 2021 - available in arxiv)
- Hyun Jung Jang, Seung Jun Shin and Andreas Artemiou “Principal Weighted\_Least Squares Support Vector Machine: An Online Dimension Reduction Tool for Binary Classification” (submitted November 2021)
- Yuexiao Dong, Ahmad Alothman and Andreas Artemiou “On Marginal Coordinate Tests with Multivariate Responses” (submitted May 2020)
- Eugen Pircalabelu and Andreas Artemiou “The LassoPSVM approach for sufficient dimension reduction using principal projections” (submitted June 2021)

*Ready for submission:*

- Hector Haffenden and Andreas Artemiou “Using Sliced Inverse Mean Difference for dimension reduction in time series”.
- Andreas Artemiou and Laura Dimond “Robust Sufficient Dimension Reduction”
- Michalis Panayides and Andreas Artemiou “On Least Squares Minimum Class Variance Support Vector Machines”
- Luke Smallman and Andreas Artemiou “Poisson Inverse Regression for Sufficient Dimension Reduction in text data”
- Ben Jones and Andreas Artemiou “Predictive power of kernel principal components in multivariate nonparametric regression”

*In preparation:*

- Andreas Artemiou “On the use of Maximum mean distance for Flexible Dimension Reduction”
- Luke Smallman and Andreas Artemiou “Quasi-likelihood Principal Component Analysis through tensor estimating equations”

## **Research Funding Awards:**

*Current:*

- Co-I in a DCMS Innovate UK proposal “CoCoRE: Connecting communities in rural economy” £588734 for Cardiff University (out of a total of £5000000). Starting date: 01/01/2020.

*Former:*

- Co-I on a Wellcome Trust iTPA grant with Prof. Matthias Eberl “Precision medicine based diagnosis and prognosis of post-operative sepsis” (£19969, starting 01/08/2021, Duration: 4 months)
- DIRI Seedcorn grant: £1420 to secure money for the visit of Dr. Eugen Pircalabelu to Cardiff in June 2020.
- Oct 2018 – Mar 2022: GW4 Biomed DTP (Doctoral Training Program) award to support a Ph.D. student in Biomedical sciences

- Apr 2019 – Mar 2020: Welcome Trust Cardiff University ISSF3 Collaboration: Cross Disciplinary Award £49,993 led by Dr. Matthias Eberl (School of Medicine)
- Cardiff /KU Leuven Collaboration Fund Award for a week-long visit to KU Leuven to enhance my collaboration with Prof. Gerda Claeskens. (Sept 2018 to March 2019)
- PI on NSF DMS award 1207651 from 09/2012 to 08/2015 \$110000 (Interrupted on 08/2013 due to the move to Cardiff University)
- PI on LMS Undergraduate Research Bursary award £1440 (Summer 2014)
- Jan 2018 – Dec 2018: Co-I on Cardiff University ISSF3 Collaboration: Cross Disciplinary Award £49,955 led by Dr. Matthias Eberl (School of Medicine).
- CUROP (Cardiff University’s research opportunity program) –Awarded March 2018 to supervise an undergraduate student for 8 weeks in the summer of 2018 for £2100.
- CUROP (Cardiff University’s undergraduate research program) – co-PI Awarded April 2017 to run for 8 weeks in Summer of 2017 (with Dr. Dimitris Potoglou – School of Geography and Planning, Cardiff University) for £1600.
- Supervisor on four (4) School of Math undergraduate research Bursaries; £1360 each (2 in Summer 2014 and 2 in Summer 2015)
- Michigan Technological University, 2 years startup fund (2010): ~\$69000.
- **\*\*Awarded but not used\*\***: PI on a submitted proposal to LMS Undergraduate Research Bursary award £1440 to run in the Summer of 2018.

### **Contributed Conference Talks/Posters:**

- 2020 World Symposium virtual meeting. “Real time Sufficient Dimension Reduction”. Virtual event.
- 2019 CRONOS meeting and Workshop on Multivariate Data Analysis. Contributed Talk. “Using functions of Inverse means and medians for sufficient dimension reduction”, Limassol, April 2019
- 2017 European Meeting of Statisticians. Contributed Talk. “A first approach to real time dimension reduction”. Helsinki, July 2017.
- 2017 Greek Statistical Institute Annual Meeting. Contributed Talk. “Sparse Generalised Principal Component Analysis”. Cyprus, April 2017.
- 8<sup>th</sup> International Conference of the ERCIM WG on Computational and Methodological Statistics , “Inverse moments and machine learning for sufficient dimension reduction”, December 2015, London, UK
- 2015 RSS Annual meeting. Contributed Poster: “On new directions for Sufficient Dimension Reduction”, September 2015, Exeter, UK.
- 2015 EMS. Contributed Talk: “A machine learning approach for robust sufficient dimension reduction”, July 2015, Amsterdam, The Netherlands
- 2015 Multivariate Analysis Today (MATTER workshop). Contributed Poster. “Flexible Dimension Reduction in Regression”, May 2015, Milton Keynes, UK.
- 2014 RSS Annual meeting. Contributed Talk: “Sufficient dimension reduction through Support Vector Machine variants”, September 2014, Sheffield, UK.
- AG DANK/BCS 2013 meeting on variable selection and dimension reduction in clustering and classification. Contributed Talk: “Sufficient dimension reduction using support vector machines and it’s variants”, November 2013, London, UK

- Joint Statistical Meeting 2013. Contributed Talk: “Using large margin classifiers for sufficient dimension reduction”, August 2013, Montreal, Canada, August 2013.
- SAMSI Workshop on “Astrostatistics”. *Poster presentation*: “Machine learning and Sufficient Dimension Reduction”, Research Triangle Park, September 2012
- SAMSI Opening Workshop on “Statistical and Computational Methodology for Massive Datasets”. *Poster presentation*: “Machine learning and Sufficient Dimension Reduction”, Research Triangle Park, September 2012
- Joint Statistical Meeting 2012. *Contributed Talk*: “Slice inverse mean difference for sufficient dimension reduction”, San Diego, CA, July 2012
- 14<sup>th</sup> meeting for New Researchers in Statistics and Probability 2012. *Contributed Talk*: “Using machine learning algorithms in sufficient dimension reduction”, San Diego, CA, July 2012
- Workshop on Statistical Inference in Complex/High Dimensional Problems. *Contributed Talk*: “On the use of machine learning techniques in sufficient dimension reduction”, Vienna, Austria, July 2012
- Joint Statistical Meeting 2011. *Contributed Talk*: “Hyperplane Alignment for sufficient dimension reduction: Implementation, application, and advantages”, Miami, FL, August 2011
- Gordon Research Conferences on Quantitative Genomics 2011. *Poster*: “Applications of hyperplane alignment on biological datasets”, Galveston, Texas, February 2011
- Joint Statistical Meeting 2010. *Contributed Talk*: “On the predictive potential of kernel principal components”, Vancouver, Canada, August 2010
- Joint Statistical Meeting 2009. *Contributed Poster*: “An inequality on principal components and regression”, Washington D.C., August 2009
- C. R. Rao Prize Conference 2009. *Poster*: “An inequality on principal components and regression”, Pennsylvania State University, State College, PA, May 2009
- Joint Statistical Meeting 2008. *Contributed Talk*: “On principal components and regression: A statistical explanation of a natural phenomenon”, Denver, CO., August 2008

### **Invited Conference Talks:**

- International Symposium of Nonparametric Statistics. Invited talk. Title TBA. Paphos, Cyprus, June 2022.
- 13<sup>th</sup> International Conference of the ERCIM WG on Computational and Methodological Statistics CMStatistics. Invited Talk. Title: Robust methods in Sufficient Dimension Reduction. December 2021, London, UK. (virtual)
- 19<sup>th</sup> Conference of the Applied Stochastic Models and Data Analysis International Society ASMDA2021, Athens, Greece, June 2021.
- 13<sup>th</sup> International Conference of the ERCIM WG on Computational and Methodological Statistics CMStatistics. Invited Talk. Title: Dimension Reduction by LASSO PSVM and principal projections. December 2020, London, UK. (virtual)
- 12<sup>th</sup> International Conference of the ERCIM WG on Computational and Methodological Statistics CMStatistics. Invited Talk. “Using adaptively weighted large margin classifiers for sufficient dimension reduction”. December 2019, London, UK.

- 11<sup>th</sup> International Conference of the ERCIM WG on Computational and Methodological Statistics CMStatistics. Invited Talk. “Real time approaches to sufficient dimension reduction”. December 2018, Pisa, Italy
- 10<sup>th</sup> International Conference of the ERCIM WG on Computational and Methodological Statistics CMStatistics. Invited Talk: “A first approach to real time and sparse real time Sufficient Dimension Reduction” , December 2017, London, UK
- Statistical Learning and Data Science Conference. Invited Talk: “Robustifying Sufficient Dimension Reduction”, Chapel Hill, NC, June 2016.
- 52<sup>nd</sup> Gregynog Statistical conference. Invited Talk: “Sufficient Dimension Reduction in Regression”, Wales, April 2016.
- International Symposium on Business and Industrial Statistics. Invited Talk: “Dimension Reduction through LqSVM”, Durham, NC, June 2014.
- 1<sup>st</sup> International Symposium of Nonparametric Statistics. Invited Talk: “Using machine learning algorithms for sufficient dimension reduction”, Halkidiki, Greece, June 2012
- Greek Statistical meeting 2011. “Hyperplane Alignment for sufficient dimension reduction: Implementation, application, and advantages”, Patra, Greece, April 2011.

### **Invited Colloquium/Seminar Talks:**

- Real time dimension reduction through Principal Least Squares SVM. Zoom talk, ISBA, LIDAM, UC Louvain, Belgium, September 2021
- Real time dimension reduction through Principal Least Squares SVM. Zoom talk, Department of Mathematics and Statistics, University of Jyväskylä, Finland, April 2021.
- Real time dimension reduction through Principal Least Squares SVM. Zoom talk, Department of Computer Science, AI and Data Science Seminar, Cardiff University, April 2021.
- Real time dimension reduction through Principal Least Squares SVM. Zoom talk, Department of Mathematics and Statistics, University of North Carolina, Charlotte, April 2021.
- Real time dimension reduction through Principal Least Squares SVM. Zoom talk, Data Science Seminar, University of Tennessee, February 2021.
- Real time dimension reduction through Principal Least Squares SVM. Zoom talk, Department of Statistics, University of Kentucky, September 2020.
- (Sufficient) Dimension Reduction in Regression. 2-day seminar. University of Aegean, Samos, February 2020.
- “Is nature fair? The practice of using principal components as a dimension reduction tool in regression”, ORSTAT Unit, Faculty of Economics and Business, KU Leuven, February 2019
- “SVM-based Sufficient Dimension Reduction in Regression”, ORSTAT Unit, Faculty of Economics and Business, KU Leuven, February 2018.
- “Dimension Reduction Reduction in Regression”, DKE Seminar, COMSC, Cardiff University
- “Principal Logistic Regression for Sparse Sufficient Dimension Reduction”, Department of Mathematics and Statistics, University of Cyprus, March 2017
- “Sufficient Dimension Reduction in Regression”, Department of Mathematics, University of Bath, March 2014



- “Sufficient Dimension Reduction through Inverse Regression and Machine Learning”, Department of Computer Science and Engineering, European University Cyprus, May 2013
- “Sufficient Dimension Reduction through Inverse Regression and Machine Learning”, Department of Mathematics and Statistics, University of Cyprus, April 2013
- “Sufficient Dimension Reduction through Inverse Regression and Machine Learning”, Department of Statistics, Texas A&M University, February 2013
- “Sufficient Dimension Reduction through Inverse Regression and Machine Learning”, Department of Statistics, University of South Carolina, February 2013
- “Sufficient Dimension Reduction through Inverse Regression and Machine Learning”, Department of Statistics, West Virginia University, February 2013
- “Sufficient Dimension Reduction through Inverse Regression and Machine Learning”, Department of Statistics, University of Missouri, February 2013
- “Sufficient Dimension Reduction through Inverse Regression and Machine Learning”, Mathematics Department, Syracuse University, January 2013
- “Sufficient Dimension Reduction through Inverse Regression and Machine Learning”, Department of Mathematics, Tulane University, January 2013
- “Sufficient Dimension Reduction through Inverse Regression and Machine Learning”, Department of Mathematics and Statistics, University of Alberta, Edmonton, January 2013
- “Sufficient Dimension Reduction through Inverse Regression and Machine Learning”, Department of Actuarial Mathematics and Statistics, Heriot Watt University, January 2013
- “Sufficient Dimension Reduction through Inverse Regression and Machine Learning”, School of Mathematics, Cardiff University, December 2012
- “Utilizing machine learning in Sufficient Dimension Reduction”, Department of Statistic, University of Georgia, September 2012
- “Topics on Dimension Reduction”, Department of Statistics, London School of Economics, March 2010.
- “Topics on Dimension Reduction”, Department of Statistics, Oklahoma State University, February 2010.
- “Topics on Dimension Reduction”, Department of Mathematical Sciences, Michigan Technological University, January, 2010.

### **Other Research Talks:**

- Statistics Group, School of Mathematics, Cardiff University, “Sufficient Dimension Reduction”, October 2013. A series of 2 talks
- SAMSI Undergraduate workshop on Massive Datasets. Talk on “Dimension Reduction in Regression”. Research Triangle Park, October 2012.
- Alumni Workshop, Pennsylvania State University, March 2010

### **Conference Organized Invited/Chair Sessions:**

- Organize a session on High Dimensional Data Analysis in 14<sup>th</sup> ERCIM Workshop on Computational and Methodological Statistics (CMSStatistics), London, December 2019.

- Organize a session on High Dimensional Data Analysis in 12<sup>th</sup> ERCIM Workshop on Computational and Methodological Statistics (CMStatistics), London, December 2019.
- Member of the Scientific Program Committee on the 12<sup>th</sup> ERCIM Workshop on Computational and Methodological Statistics (CMStatistics).
- Organize a session on High Dimensional Data Analysis in 11<sup>th</sup> ERCIM Workshop on Computational and Methodological Statistics (CMStatistics), London, December 2019.
- Chair a session on “Dimension reduction and high-dimensional supervised learning” on CMStatistics conference in Pisa, December 2018
- Proposed and organized two invited sessions on “Regression and Dimension reduction for complex structures” and “Variable selection for complex data structures” to appear the annual RSS meeting in Cardiff, September 2018
- Proposed and organized an invited session on “Data Analysis of complex data structures” to appear during the 1<sup>st</sup> CRONOS MDA Conference, Limassol, Cyprus, April 2018

### **Current Students and Research Assistants:**

- Hayley Randall, Ph.D., School of Mathematics, Cardiff University (Sep 2016-Mar 2020)
- Ben Jones, Ph.D., School of Mathematics, Cardiff University (Sep 2016- Mar 2020)
- Alya Alzahrani, Ph.D., School of Mathematics, Cardiff University (July 2019-Dec 2022)
- (Co-advisor) Paul Robinson, Ph.D., Biosciences (Oct 2017 – part time)
- (Co-advisor) Ross Burton, Ph.D., Medical School (Oct 2018 – Sep 2021)
- In the supervisory committee of Dr. Kimon Ntotsis (University of Aegean) since Jan 2019.
- Final year projects: Stephen Babos (MMORS), Charles Worsfold (BSc)

### **Former Students and Research Assistants:**

- Ph.D. students:
  - Luke Smallman, Ph.D. School of Mathematics (main supervisor), Cardiff University, Sep 2015 – Mar 2020)
  - Timothy Vivian-Griffiths, Ph.D. School of Medicine (co-advisor), Cardiff University Sep 2013 – April 2017)
- M.Sc theses:
  - Cardiff University (2015: Konstantinos Aggelakopoulos; 2016: James Buntwal; 2017: Ben Byrne, Haimo Li; 2018: Winnie Birech; 2019: Yi Xiang, Junjie He, Xiangyu Wang, Andreas Fredrick; 2020: Min Soo Kang, Yilin Sun, Hantang Zhang, Sarah Parry, Zhuo Xin )
  - Lipu Tian, M.S. Mathematical Sciences (Statistics), Michigan Technological University (Graduated, May 2012. M.Sc. project title: “A Simulation Study on Using Moment Functions for Sufficient Dimension Reduction”)
- Min Shu, Research Assistant, January 2012 – April 2012.

- Final year project (MMath): Stefan Andjelkovic (2016)
- Final year project (BSc): Charles Worsforf (2020), Hector Haffenden (2019), Michalis Panayides (2018), Harry Chant (2018), Sarah Medland (2017), Michael Clayton-Rose (2017), Ben Byrne (2016), Laura Dimond (2016), Holly Tible (2015)
- Undergraduate Bursaries: Stephen Babos (CUROP 2018), William Underwood (visiting from Oxford – Summer 2017), Sophie Shapcott (CUROP 2017), Rishan Shan (funded by School of Mathematics 2015) , Alex Carney (School of Mathematics, 2014, 2015 jointly with Dr. Jennifer Morgan), Laura Dimond (School of Mathematics, 2014), Luke Smallman (London Mathematical Society, 2014)
- Undergraduate Summer Visitors: William Underwood (4 weeks in August 2017 from Oxford University)

## **Student Committee Member**

- Internal Examiner for the Ph.D. viva of Gareth Davies (School of Mathematics, Cardiff University), December 2017.
- Supervised a number of industrial M.Sc. theses at Cardiff University in projects like text mining, dimension reduction in genetic data, data mining techniques in genetics and in sports, optimization, regression models.
- Sapna Kumari, Ph.D. Mathematical Sciences (Statistics), Michigan Technological University (Ph.D.), April 2013

## **Teaching Experience:**

Cardiff University:

- Summer 2016, Summer 2018: Two day course on Introduction to Statistical Theory offered by Cardiff University Graduate School.
- Spring 2016, Fall 2016: MA3505: Multivariate Statistics
- Fall 2015, Fall 2016, Fall 2017, Fall 2018, Fall 2019: MA1500: Introduction to Probability
- Fall 2015, Fall 2016, Spring 2018, Spring 2019, Spring 2020: MA 2501: Programming and Statistics
- December 2014: Proposed the creation of a new course on Multivariate Statistics for final year undergraduates. Also proposed the Programming and Statistics course for second year students.
- Spring 2014, Spring 2015: MA 0263: Introduction to Computational Statistics (undergraduate)
- Fall 2013, Fall 2014: MA 2002: Matrix Algebra.

Michigan Tech, Department of Mathematical Sciences:

- Fall 2010, Spring 2011, Fall 2011, Spring 2012: MA3710: Engineering Statistics
- Fall 2010, Fall 2011: MA5761: Computational Statistics (graduate)

Instructor at Pennsylvania State University, Department of Statistics:

- Summer 2007, Summer 2008, Summer 2010: STAT 200: Elementary Statistics
- Fall 2007, Fall 2008, Fall 2009: STAT 318: Introduction to Probability
- Fall 2006, Spring 2007, Spring 2008, Spring 2009, Spring 2010: STAT 319: Mathematical Statistics for Sciences

Teaching Assistant at Pennsylvania State University, Department of Statistics:

- Fall 2005 – Spring 2006 – Summer 2006: General Education Courses: STAT 100 – STAT 200 Elementary Statistics

### **Research/Academic Awards:**

- Eleneio Dissertation Award, to “the best dissertation written by a Greek statistician in Greece or abroad on Statistics for the two year period 2009-2010”, Greek Statistical Institute, April 2011.
- Award of the AC-Nielsen as the University of Cyprus, Department of Mathematics and Statistics, graduating student who has better used the theory of statistics in applied experiments, June 2005.
- Award of the Computer Science minor program as the Graduating student with the highest GPA in the Computer Science minor program, June 2005.
- Honorable Mention (4<sup>th</sup> place) in the National Contest “Research for undergraduate students” organized by the Cyprus Research Promotion Organization (2004)
- Award for my excellent research work in Robotics from the Computer Science Department of the University of Cyprus (2003).

### **Teaching Awards/Nominations:**

- 2018/19 School of Mathematics graduating student award in the category of “Tutor of the year” and honourable mention in the category of “Most influential member of staff for the final year”. Also I was nominated as “Lecturer of the year” and “Most approachable/friendliest member of staff”.
- Twice nominated for an “Enriching Student Life” award by Cardiff’s University Student Union, Spring 2018 and Spring 2015.
- William L. Harkness Teaching Award, for “excellent preparation and commitment to teaching for the academic year 2007 – 2008”, Department of Statistics, Pennsylvania State University (August 2008)

### **Professional Development:**

- July 2021; Completed Unconscious Bias Training at Cardiff University
- July 2021: Completed Equality, Diversity and Inclusion module at Cardiff University.
- February 2021: Information Security training in LC
- December 2020: GW4 Data centric engineering workshop
- October 2020: Tutoring at a distance workshop (CESI)
- September 2020: Running a virtual classroom in Zoom
- September 2020: Running a virtual classroom in Blackboard Collaborate

- September 2020: Creating video content using Panopto (Getting started)
- September 2020: Getting used to Blackboard Collaborate Ultra (CESI)
- May 2020: Webinar on “Effective Practices in Supervising Doctoral Candidates at a Distance” by UK Council for Graduate Education
- April 2020: Fire Safety 2020 training in LC
- April 2020: Prevent Training in LC
- April 2020: Fraud and Bribery Training in LC
- November 2019: Viva chair workshop by Cardiff University HR group
- July 2019: Attended a workshop on Semantic Representation Learning in Cardiff University.
- June 2019: Co-organizer of the First CUBRIC-MATHS Collaboration event.
- June 2019: Attended the IMA workshop on assessment feedback in Cardiff University.
- June 2019: Completed Information Security module in LC
- May 2019: Attended the First AI in Health and Care Study Group, Cardiff
- February 2019: Completed a 2-day First-aid renewal qualification
- May 2018: Completed Welsh Language module at Cardiff University.
- May 2018: Completed Equality Diversity and Inclusion module at Cardiff University.
- May 2018: Completed Unconscious Bias module at Cardiff University.
- Attended 3<sup>rd</sup> UCL Big Data Conference June 2017.
- June 2017: Completed a course on “Obtaining HEA Associate/Fellow status” by Cardiff University HR.
- March 2017: Completed “Supervising Research Students (Sciences)” by Cardiff University Staff Development Office
- June 2016: Completed “Cardiff Futures” a year-long leadership program
- May 2016: Completed a 3-day First aid at workplace course.
- March 2016: Online training on Information security by Cardiff University completed
- December 2015: Data protection issues training by Cardiff University HR.
- January 2015: Seven Secrets of Highly Effective Research Supervisor.
- January 2015: Regulation training for Research Student Supervisors by Cardiff University Staff Development Office.
- December 2014: Attended a collaboration event on solving urban challenges with data.
- October 2014: Attended a Welsh Water Collaboration event.
- September 2014: Learning Central Possibilities Session by the Enhanced Learning Technology Team in Cardiff University.
- September 2014: Attended a Horizon 2020 Masterclass by the Enterprise Europe Network.
- September 2014: Attended CETL-MSOR Conference 2014: “Mathematics and Statistics Teaching, Learning and Support: Real, Virtual, Mobile”, Cardiff University.
- April 2014: Attended an Enterprise and Innovation event at Cardiff University.
- March 2014: Successfully completed a course on “Statistical Analysis of fMRI data” through Coursera.

- January 2014: Attended conference on “Statistical Analysis of High Dimensional/Complex Data”, University of Florida.
- December 2013: Attended conference on “Optimal Decisions in Statistics and Data Analysis”, Cardiff University.
- September 2013: Attended SAMSI’s opening workshop on the LDHD program. For the Fall 2013 semester I participated on the discussion for 3 working groups.
- Fall 2012 – Spring 2013: Participating in SAMSI activities during my visit, including and not limited to talks, luncheons, conferences, workshops and several working groups.
- Spring 2012:
  - Teaching Workshop at Michigan Technological University
    - “Balancing Teaching, Research, and Service”
  - Research Workshop at Michigan Technological
    - Workshop “Proposal Writing and Panel Review”
    - “Interpreting and Integrating Panel Reviews”
    - “Post-Award workshop”
    - Legal Aspects Seminar (April 2012)
- Fall 2011:
  - Research Workshops at Michigan Technological University:
    - “Pre-Award Workshop”
  - Teaching Workshops at Michigan Technological University
    - “Repurposing the classroom”
    - “Connecting with Students in an Online Environment”
- Spring 2011: Completed Online Course “99ITCG IT Compliance General Training” offered by Michigan Technological University
- Spring 2011:
  - Research Workshops at Michigan Technological University
    - “Confidentiality”
    - “Reading Account Statements/Payroll Reallocation”
    - “NSF CAREER grants” (full-day)
- Conference Attendance (with no talk or poster):
  - C. R. Rao Prize Conference, University Park, PA
- Fall 2010:
  - Research Workshops at Michigan Technological University
    - “Proposal Processing”
    - “National Institute of Health Grants”
    - “Conflict of Interest”
    - “Strategies for Identifying Funding”
    - “National Security Research”
    - “Proposal/Grant Writing”
    - Teaching Workshops at Michigan Technological University
      - “How to build technological teaching strategies”
- Fall 2010: Completed a 3 week online course “OL 2000: Effective Online Teaching” offered by the World Campus at Pennsylvania State University.
- Spring 2009:
  - Completed an 8 week course on College Teaching offered by the Schreyer Institute for Teaching Excellence at Penn State
  - Conference attendance (with no talk or poster):

- “New Directions in Asymptotic Statistics”, Athens, GA

### **Professional Organizations membership:**

- RSS: Royal Statistical Society
- BCS: British Classification Society
- IMS: Institute of Mathematical Statistics
- ESI: Greek Statistical Institute (Elliniko Statistiko Institutouto)
- IASC: International Association of Statistical Computing
- CSS: Cyprus Statistical Society
- ASA: American Statistical Association (2006 to 2015)

### **Other Professional Activities:**

- Associate Editor for Computational Statistics and Data Analysis (March 2021 onwards)
- Journal Topic Editor: Mathematics (MDPI)
- Technical Program Committee: Workshop on Big Data Engineering (WBDE) 2021
- Reviewer for the LMS Undergraduate Research Bursary competition 2019.
- Reviewer for academic Journals:
  - Advances of Data Analysis and Classification
  - Advances in Statistical Analysis
  - American Open Journal of Statistics
  - Annals of Statistics
  - Annals of the Institute of Statistical Mathematics
  - Biometrika
  - Biostatistics
  - Computational Statistics and Data Analysis
  - Entropy
  - Expert Systems with Applications
  - Far East Journal of Mathematical Sciences
  - Health Systems
  - Heliyon
  - Informatics
  - Journal of Applied Statistics
  - Journal of Computational and Graphical Statistics.
  - Journal of Machine Learning Research
  - Journal of Multivariate Analysis
  - Journal of Nonparametric Statistics
  - Journal of Statistical Theory and Practice
  - Journal of Systems Science and Complexity
  - Journal of the American Statistical Association
  - Journal of the Korean Statistical Society
  - Journal of the Royal Statistical Society, Series B.
  - Mathematics in Engineering, Science and Aerospace Journal
  - Open Journal of Statistics
  - Pattern Recognition
  - PLOS

- Scandinavian Journal of Statistics
- Statistica Sinica
- Statistical Papers
- Statistics
- Statistics and Probability Letters
- Statistics in Medicine
- Technometrics
- The American Statistician
- The R Journal
- Reviewer for the Proceedings of the
  - Greek Statistical Institute meetings
  - International Symposiums of Nonparametric Statistics
- Reviewer for collective volumes of work:
  - Encyclopedia on Social Network Analysis and Mining by Springer
  - Data Analysis and Applications: Computational, Classification, Financial, Statistical and Stochastic Methods (ISTE, Wiley) edited by A. Makrides, A. Karagrigoriou and Ch. Skiathas.

### **Department and University wide committees/service:**

- Cardiff University:
  - University wide:
    - May 2020 – today: Cardiff University/ONS strategic partnership Theme Leader on “Skills and Education”.
    - October 2019 – today: Deputy Director of Data Science Academy
    - November 2018 – today: Volunteered to assist University’s strategic planning group on modelling student intake and REF data.
    - September 2017: Member of academic approval panel for MSc Nursing.
    - November 2014 – September 2015: School Representative to the “University Research Data Reference Group”
  - College of Physical Sciences and Engineering:
    - October 2015: Served in a panel to give feedback to ERC proposals.
  - School of Mathematics:
    - January 2021 – today: Director of Postgraduate Taught Studies
    - November 2019 – today: Director of the M.Sc. in Data Analytics for Government.
    - September 2016 - today: Director of the M.Sc in Data Science and Analytics.
    - November 2018 – December 2021: Member of the research committee
    - April 2014 – September 2020: Coordinator of the “Year abroad” academic programs.
    - October 2019: Member of the New Building user group



- December 2015 – January 2016: Served in Hiring committee for a position in Mathematics with collaboration with Computer Science.
  - October 2014 – May 2016: Member of the “Admissions and Marketing Committee”
  - January 2014 – May 2016: Member of the “Engagement Committee” of the School.
  - December 2014 – December 2015: Member of the School working group for the new MSc in OR and Data Analytics.
  - September 2014 – January 2015: Erasmus coordinator
  - January 2014: Member of the committee to develop the “International” part of the “Way forward” vision for the School.
- Michigan Technological University
  - University wide:
    - February 2012: Served as faculty judge for the MTU Graduate Research Conference
  - Department of Mathematical Sciences:
    - September 2012 – April 2013: Hiring Committee
    - September 2011 – June 2012: Graduate Studies committee
    - January 2011, September 2011: Statistics Qualifier Exam
    - September 2010 – June 2012: Undergraduate student committee
- Pennsylvania State University:
  - Eberly School of Science:
    - September 2006 – May 2009: Graduate student representative in the Eberly School of Science Committee of Climate and Diversity
  - Department of Statistics:
    - Member of the Student Advisory Committee (2005, 2006)
- University of Cyprus:
  - University wide:
    - Student representative in the University wide Committee of Public and International Affairs (June 2002 - March 2005)
    - Student representative in the University wide E-learning Committee (September 2003 - March 2005)
    - Elected for three years (2002/2003/2004) as a member of the University Student Union's Council.
  - Department of Mathematics and Statistics:
    - Elected for two years (2002/2004) to be a student representative in the Department's Council

### **Statistical Consulting Experience:**

- Over the years I have been asked by a number of companies to advise them on Statistical processes and machine learning approaches to their analysis. This includes a variety of organizations from Governmental Agencies, Private medical sector industries, sports organizations and even label printing companies.
- Two semesters (9 months) as a required practice at the Statistical Consulting Center, Department of Statistics, Pennsylvania State University.

### **Other Work Experience:**

- Summer 2009: Research Assistant, Department of Statistics, Pennsylvania State University (Profs Francesca Chiaromonte, Jenni Evans)
- August 2004 - October 2005: Researcher - Special Scientist in the Computer Architecture Lab, University of Cyprus (Prof. Yanos Sazeides)
- July 1999-September 2001: Served in the Army as a second-lieutenant.

### **Computing Languages:**

- Excellent knowledge in Programming in C, Fortran, R
- Average knowledge of C++, SAS, SPSS, Minitab
- Familiar with Software like Matlab, Mathematica, Java and Python programming

***Last updated: January 6<sup>th</sup>, 2022***