

ANNEX B

UNIVERSITY OF MILAN

Public selection for recruiting No. 1 tenure track researcher(s) (RTT) for competition sector 13/D1-Statistica, (scientific-disciplinary sector SECS-S/01 - Statistica (ora Gruppo scientifico-disciplinare 13/STAT-01- Statistica) at the Department of Economia, Management E Metodi Quantitativi, (announcement published in Official Gazette No. 49 of 18/06/2024) - Competition code 5576

[Name and Surname] CURRICULUM VITAE

(N.B. CV MUST BE OF UP TO 30 PAGES AND INCLUDE THE DETAILS CANDIDATES CONSIDER USEFUL FOR THE ASSESSMENT.

ALL THE TITLES INSERTED BELOW ARE JUST EXAMPLES THAT CAN BE REPLACED, CHANGED OR COMPLETED)

PERSONAL DATA (DO NOT INCLUDE YOUR PERSONAL ADDRESS AND LANDLINE OR MOBILE PHONE NUMBER)

SURNAME	CHAN
NAME	KWO LIK (LAX)
DATE OF BIRTH	██████████

QUALIFICATIONS

DEGREE

(Specify full degree name and related score, University, date, thesis title, etc.)

Full degree name: Bachelor of Science in Mathematics
Related score: Upper second class
University: University of Liverpool, Liverpool, United Kingdom
Degree award date: 09/07/2013
Thesis title: Tiling with dominoes (supervised with Dr. Anna Pratoussevitch)

Full degree name: Master of Science in Mathematical sciences
Related score: Pass with merit
University: University of Liverpool, Liverpool, United Kingdom
Degree award date: 03/11/2014
Thesis title: Dynamics of low-discrepancy sequences (supervised by Dr. Radhakrishnan Nair)

DOCTORAL DEGREE OR EQUIVALENT QUALIFICATION EARNED IN ITALY OR ABROAD / MEDICAL SPECIALISATION DIPLOMA OR EQUIVALENT QUALIFICATION, FOR THE RELEVANT SECTORS, EARNED IN

ITALY OR ABROAD

(Specify qualification full name and related score, institution, date, thesis title, etc.)

Full degree name: Doctor in Philosophy
Related score: Pass
University: The Open University, Milton Keynes, United Kingdom
Degree award date: 25/01/2018
Thesis title: Continuous spectra for substitution-based sequences

RESEARCH CONTRACTS, RESEARCH FELLOWSHIP CONTRACTS, POSTDOCTORAL SCHOLARSHIPS OR SIMILAR CONTRACTS

(Specify, for each contract, university/institution, starting and termination date, duration in years, etc.)

Position : Tenure track assistant professor in Statistics
University/Institution : School of Mathematics, The University of Birmingham, United Kingdom
Starting and termination date : 01/07/2024 - present

Position held : Ricercatore a tempo determinato tipo A
University/Institution : Dipartimento di Economia e L'Impresa, Università del Piemonte Orientale, Italy
Starting and termination date : 01/02/2022 and 31/06/2024

Position held : Postdoctoral research associate
University/Institution : Dipartimento di Economia e L'Impresa, Università del Piemonte Orientale, Italy
Starting and termination date : 08/09/2020 and 31/01/2022
Duration in years : around 1.5 years

Position held : Research associate
University/Institution : Knowledge Media Institute at the Open University, Milton Keynes, United Kingdom
Starting and termination date : 16/09/2019 and 16/03/2020
Duration in years : 0.5 year

Position held : Research fellow
University/Institution : Rights lab at the University of Nottingham, United Kingdom
Starting and termination date : 01/08/2018 and 31/07/2019
Duration in years: 1 year

Position held : Research assistant
University/Institution : Horizon Institute at the University of Nottingham, United Kingdom
Starting and termination date : 21/08/2017 and 01/08/2018
Duration in years : Almost 1 year

TEACHING ACTIVITIES AT ITALIAN OR FOREIGN UNIVERSITIES

(Specify academic year, university, degree course, number of hours/CFU, indicate type of activity, start and end date - day, month, year, etc.)

Academic year: 2023 - 2024
University: Università del Piemonte Orientale, Novara, Italy
Degree course: Statistics for Finance course (in English) in Laurea Magistrale in Finance
Number of hours/CFU: 60 hours/8 CFU
Type of activity: Preparation of lectures slides, homework sheets and solutions, R codes, exams and management of teaching website. Delivery of lectures and R tutorials and exam marking and oral evaluation.

Start and end date: 06/11/2023 and 17/04/2024

Scientific sector: SECS-S/01

Number of students: around 30 students

Academic year: 2023-2024

University: Università del Piemonte Orientale, Novara, Italy

Degree course: Laboratorio di Statistica (in Italian) in Laurea triennale in Economia Aziendale

Number of hours/CFU: 40 hours

Type of activity: Preparation of homework sheets and solutions and management of teaching website. Delivery of lectures.

Start and end date:

Scientific sector: SECS-S/01

Number of students: around 300 students

Academic year: 2022 - 2023

University: Università del Piemonte Orientale, Novara, Italy

Degree course: Statistics for Finance course (in English) in Laurea Magistrale in Finance

Number of hours/CFU: 60 hours/8 CFU

Type of activity: Preparation of lectures slides, homework sheets and solutions, R codes, exams and management of teaching website. Delivery of lectures and R tutorials and exam marking and oral evaluation.

Start and end date: 21/02/2023 and 25/05/2023

Scientific sector: SECS-S/01

Number of students: around 30 students

Academic year: 2021 - 2022

University: Università del Piemonte Orientale, Novara, Italy

Degree course: Statistics for Finance course (in English) in Laurea Magistrale in Finance

Number of hours/CFU: 60 hours/8 CFU

Type of activity: Assist in preparation and creation of lectures slides, homework sheets and solutions, R codes, exams and management of teaching website. Assist in lectures and R tutorials.

Start and end date: 22/02/2022 and 19/05/2022

Scientific sector: SECS-S/01

Number of students: around 30 students

Academic year: 2014 - 2015

Institution: London taught course centre for PhD, United Kingdom

Degree course: Aperiodic order (PhD level supplementary courses)

Number of hours: 12.5 hours

Type of activity: Marking assignments and delivering tutorials

Number of students: around 10 students

Academic year: 2013 - 2014

University: University of Liverpool, United Kingdom

Degree course: Bachelor and master level courses in Mathematical Sciences.

List of courses, responsibility and number of hours:

Calculus I (first year): Teaching in tutorials (10 hours) and marking assignments (25 hours)

Calculus II (first year): Teaching in tutorials (10 hours) and marking assignments (20 hours)

Introduction to Statistics (first year): Teaching in tutorials (5 hours)

Complex functions (Second year): Teaching in tutorials (10 hours) and marking assignments (20 hours)

Geometry of curves (third year): Teaching in tutorials (5 hours) and marking assignments (15 hours)

Group theory (third year): Teaching in tutorials (5 hours) and marking assignments (10 hours)

Analysis and number theory (third year): Teaching in tutorials (10 hours)

Number of students: varying from 300 students to 10 students depending on the level.

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ATTESTED TRAINING OR RESEARCH ACTIVITIES AT QUALIFIED ITALIAN OR FOREIGN INSTITUTIONS

(Specify academic year, institution, course, period, commitment in terms of hours, indicate type of activity, etc.)

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ATTESTED ACTIVITY IN THE CLINICAL FIELD

(Specify date, duration, role, institution where the aid activity was carried out, etc.)

Non-applicable

IMPLEMENTATION OF PROJECTS

(Specify date, project name, indicate type of activity, any organization in favor of which the activity was carried out etc.)

<p>Date: From 16/09/2019 till 16/03/2020 Project name : Energy management system for SMEs Type of activity: Implementation of combinatorial optimisation, hidden Markov models and deep learning models for data collected by AND technology and research and write reports on findings and at the end of contract, I made a presentation on the findings to the company. University/Institution : Knowledge Media Institute at the Open University, Milton Keynes, United Kingdom in collaboration with AND technology and research (industry)</p> <p>Date : From 01/08/2018 and 31/07/2019 Project name : Prevalence estimates of human trafficking Type of activity : Develop estimation technique namely Multiple systems estimation technique as well as R package to estimate the size of human trafficking in the U.K. The technique and methodology developed result in a publication in JASA and an R package SparseMSE on CRAN. We presented the methodology in the meetings with national organisations and representatives of the home office at the end of this project. University/institution : Rights lab at the University of Nottingham, United Kingdom in collaboration with the home office, United Kingdom (government organisation)</p>

ORGANISATION, SUPERVISION AND COORDINATION OF NATIONAL AND INTERNATIONAL RESEARCH GROUPS, OR PARTICIPATION IN THEM

(For each entry, specify year, role, research group, any financing institutions and amount of financing, indicate type of project, etc.)

<p>Year: 2022-2026 Role: participant and member Research group: Complex and text data group and high-dimensional data analysis group inside COST Action CA21163 "HiTec", "Text, functional and other high-dimensional data in econometrics: New models, methods, applications" Project link: https://www.cost.eu/actions/CA21163/ Financing institutions: European union</p> <p>Year: 2019-2020</p>
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Role: Co-investigator

Research group: Responsive Algorithmic Enterprise: Energy management system for SMEs

Project link: <https://kmi.open.ac.uk/projects/name/responsive-algorithmic-enterprise>

Financing institutions: AND technology and research (Company website: <https://andtr.com/>)

Host institution: The Open University, Milton Keynes, United Kingdom

Year: 2018-2019

Role: Member and co-investigator

Research group: Data and measurement programme

Programme link: <https://www.nottingham.ac.uk/research/beacons-of-excellence/rights-lab/programmes/index.aspx>

Financing institutions: University of Nottingham Beacon of excellence programme

Host institution: Rights lab, University of Nottingham

HOLDING PATENTS

(For each patent, specify authors' names, title, classification (national or international), patent number, etc.)

Non-applicable

SPEAKING AT NATIONAL AND INTERNATIONAL CONFERENCES AND CONVENTIONS

(Specify conference/convention title, date, duration in days/hours, organizing institution, etc.)

Invited talks and seminars:

Conference/convention title: Data Science ad Computational Statistics Seminar

Date: 07/09/2023

Duration in day/hours: 1 day, seminar lasted for 50 mins and 10 mins Q&A

Organising institution: University of Birmingham, United Kingdom

Location: Birmingham, United Kingdom

Talk title: A link function specification test in semi-parametric regression (Invited)

Conference/convention title: The 25th International Conference on Computational Statistics, London

Conference website: <http://www.compstat2023.org/>

Date: 22-25/08/2023

Duration in day/hours: 1 day, talk lasted for 20 mins and 10 mins Q&A

Organising institution: Sponsored by European Regional Section of the IASC and hosted by Birkbeck, University of London, United Kingdom

Location: London, United Kingdom

Talk title: On specifying a link function of a single functional index model (Invited)

Conference/convention title: Seminari di Matematica e Statistica

Date: 04/07/2023

Duration in day/hours: 1 day, seminar lasted for 50 mins and 10 mins Q&A

Organising institution: Università del Piemonte Orientale, Italy

Location: Novara, Italy

Talk title: Goodness-of-fit test in the Single Functional Index Model (Invited)

Conference/convention title: The 15th International conference of the ERCIM WG on Computational and Methodological Statistics(CM Statistics)

Conference website: <https://www.cmstatistics.org/CMStatistics2022/>
Date: 17-19/12/2022
Duration in day/hours: 1 day, talk lasted for 20 mins and 10 mins for Q&A
Organising institution: Hosted by King's college London, United Kingdom
Location: London, United Kingdom
Talk title: A specification test for the single functional index model (Invited)

Conference/convention title: The International symposium of nonparametric statistics
Conference website: <https://cyprusconferences.org/isnps2022/>
Date: 20-24/06/2022
Duration in day/hours: 1 day, talk lasted for 20 mins and 10 mins for Q&A
Organising institution: Sponsored by Bernoulli society for Mathematical Statistics and probability and organised by the University of Cyprus, Cyprus
Location: Cyprus, Cyprus
Talk title: On the complexity index of a functional time series (Invited)

Conference/convention title: The 14th International conference of the ERCIM WG on Computational and Methodological Statistics (CM Statistics)
Conference website: <https://www.cmstatistics.org/CMStatistics2021/>
Date: 18-20/12/2021
Duration in day/hours: 1 day, talk lasted for 20 mins and 10 mins for Q&A
Organising institution: Hosted by King's college London, United Kingdom
Location: Online
Presentation mode: Hybrid (due to Covid-19)
Talk title: Evaluating the complexity of a Functional time series (Invited)

Conference/convention title: Open Statistical Physics
Date: 29/03/2017
Duration in day/hours: 1 day, talk lasted for 25 mins and 5 mins for Q&A
Organising institution: The Open University, Milton Keynes, United Kingdom
Location: Milton Keynes, United Kingdom
Talk title: Substitution-based structures with absolutely continuous spectrum (Invited)

Conference/convention title: Workshop on Transversal aspects of tilings
Conference website: <https://oleron.sciencesconf.org/>
Duration in day/hours: 1 day, talked last for 20 mins and 10 mins for Q&A
Organising institution: CNRS, France, held at Oléron, France
Location: Oléron, France
Talk title: Diffraction spectrum of a Rudin-Shapiro like sequence (plenary talk)

Contributed talks:

Conference/convention title: The 52nd Scientific meeting of the Italian Statistical Society (2024)
Date: 17-20/06/2024
Conference website: <https://sis2024.sis-statistica.it/>
Duration in day/hours: 1 day, talk lasted for 7 mins and 5 mins discussion and 5 mins Q&A
Organising institution: Università degli studi di Bari Aldo Moro, Bari, Italy
Location: Bari, Italy
Talk title: A bootstrap approach to account for model selection in Multiple Systems Estimation (contributed)

Conference/convention title: The 14th Scientific meeting of Classification and Data analysis group
Date: 11-13/09/2023
Conference website: <https://www.unisa.it/unisa-rescue/page/dettaglio/id/529/module/87/row/10040/cladag-2023>
Duration in day/hours: 1 day, talk lasted for 15 mins and 10 mins Q&A
Organising institution: Università degli studi di Salerno, Italy
Location: Salerno, Italy
Talk title: Goodness-of-fit test for the Single Functional Index Model (contributed)

Conference/convention title: The International workshop for Functional and Operatorial Statistics

Date: 23/06/2021
 Conference website: <https://iwfos2021.sci.muni.cz/>
 Duration in day/hours: 1 day, talk lasted for 25 mins and 5 mins Q&A
 Organising institution: Marsaryk University, Brno and Charles University Prague, Czech Republic. Due to Covid-19, it has moved online.
 Location: Online
 Talk title: About the complexity of a Functional Times Series(contributed)

Conference/convention title: International Conference on Quasicrystals, Kathmandu, Nepal
 Date: 16-24/09/2016
 Conference website: <https://www.iucr.org/news/newsletter/volume-25/number-1/icq13>
 Duration in day/hours: 1 day
 Organising institution: Kathmandu University, Nepal
 Location: Kathmandu, Nepal
 Talk title: Inflation-based sequences with absolutely continuous spectrum

NATIONAL AND INTERNATIONAL AWARDS AND ACCOLADES FOR RESEARCH ACTIVITY

(Specify award and motivation for the award, date, issuing organisation, etc.)

Award: FSE REACT - EU, Pon ricerca e Innovazione 2014-2020 Italy
 Motivation for the award: Winner of Ricercatore di Tempo determinato tipo A
 Date: 01/02/2022 (for the duration of 3 years)
 Issuing organization: European Union

Award: Young scientist award to attend International conference on quasicrystals, Kathmandu, Nepal 2016
 Motivation for the award: Quality of research articles and academic profiles
 Date/year: 2016
 Issuing organization: International union of crystallography

Award: Partial funding to attend thematic month on transversal aspects of tilings at Oléron, France
 Motivation award: academic profile and quality of research activities
 Date/year: 2016
 Issuing organization: CNRS, France

Award: Fully funded PhD studentship with stipend
 Motivation for the award: Bachelor and master degrees results and interview performance
 Date/year 2014 (Duration of 3 years)
 Issuing Organisation: The Open University, Milton Keynes, United Kingdom

Award: Liverpool affinity award at the University of Liverpool, United Kingdom
 Motivation award: Exam results
 Date/year: 2013-2014
 Issuing organization: The University of Liverpool, United Kingdom

Award: Faculty of physical sciences and engineering postgraduate scholarship at the University of Liverpool, United Kingdom
 Motivation award: Exam results
 Date/year: 2013-2014
 Issuing organization: The University of Liverpool, United Kingdom

Award: Departmental scholarship for Master of Sciences students at the University of Liverpool, United Kingdom
 Motivation award: Exam results
 Date/year: 2013-2014

Issuing organization: The University of Liverpool, United Kingdom

Award: University of Liverpool Regional Award at the University of Liverpool, United Kingdom

Motivation award: Exam results

Date/year: 2013-2014

Issuing organization: The University of Liverpool, United Kingdom

HOLDING A EUROPEAN SPECIALISATION DIPLOMA RECOGNISED BY INTERNATIONAL BOARDS

(For those competition sectors for which it is requested)

(Specify diploma and indicate the area, date, institution that awarded the diploma, etc.)

Non applicable

QUALIFICATIONS UNDER ART.24, PARAGRAPH 3.a AND 3.b, OF LAW No.240/2010 OF 30 DECEMBER 2010

(Specify whether it is a type A or type B contract, University, contract effective date and end date, etc.)

Contract: Ricercatore di tempo determinato tipo A

University: Università del Piemonte Orientale, Italia

Contract effective date: 01/02/2022

Contract end date: 31/01/2025

SCIENTIFIC PRODUCTION

SCIENTIFIC PUBLICATIONS

(For each publication, specify the following: authors' names, full title, publisher, date and place of publication, ISBN/ISSN/DOI or equivalent code)

Publications in reviewed journals:

1. Authors's names in order: Bernard W. Silverman, **Lax Chan**, Kyle Vincent
Full title: Bootstrapping multiple systems estimates to account for model selection
Publisher: Statistics and Computing, Springer
Date of publication: 21 November 2023 online
DOI: <https://doi.org/10.1007/s11222-023-10346-9>
2. Authors's names in order: Enea G. Bongiorno, **Lax Chan**, Aldo Goia
Full title: Detecting the Complexity of a Functional Time Series
Publisher: Journal of Nonparametric Statistics, Taylor and Francis
Date of publication: 12 Jul 2023 online
DOI: <https://doi.org/10.1080/10485252.2023.2234507>
3. Authors's names in order: **Lax Chan**, Lauren Delsol, Aldo Goia
Full title: A link function specification test in the Single Functional Index Model
Publisher: Advances in Data Analysis and Classification, Springer
Date of publication: 22 June 2024 online
DOI: <https://doi.org/10.1007/s11634-023-00545-7>

4. Authors's names in order: **Lax Chan**, Bernard W. Silverman, Kyle Vincent
Full title: Multiple Systems Estimation for Sparse Capture Data: Inferential Challenges when there are Non-Overlapping Lists
Publisher: Journal of American Statistical Association, Taylor and Francis
Date of publication: 18 Feb 2020 online
DOI: <https://www.tandfonline.com/doi/full/10.1080/01621459.2019.1708748>
5. Authors's names in order: Ian Dryden, James Goulding, Simon Preston, **Lax Chan**
Full title: Discussion of Multiple Systems Analysis for the quantification of Modern Slavery: Classical and Bayesian approaches by Silverman
Publisher: Journal of Royal Statistical Society, Series A, Oxford Academic
Date of publication: 05 March 2020 online
DOI: <https://rss.onlinelibrary.wiley.com/doi/full/10.1111/rssa.12505>
6. Authors's names in order: Lax Chan, Uwe Grimm, Ian Short
Full title: Substitution-based structures with absolutely continuous spectrum
Publisher: Indagationes Mathematicae, Elsevier
Date of publication: 25 May 2018 online
DOI: <https://doi.org/10.1016/j.indag.2018.05.009>
7. Authors's names in order: Lax Chan, Uwe Grimm
Full title: Spectrum of a Rudin--Shapiro-like sequence
Publisher: Advances in Applied Mathematics, Elsevier
Date of publication: 28 December 2016 online
DOI: <https://doi.org/10.1016/j.aam.2016.12.003>
8. Authors's names in order: Kwo Chan*, Radhakrishnan Nair
Full title: Problems in strong uniform distribution
Publisher: Tatra Mountains Mathematical Publications, The Journal of Slovak Academy of Sciences
Date of publication: 11 March 2015 online
DOI: <https://doi.org/10.2478/tmmp-2014-0018>
9. Authors's names in order: Kwo Chan*, Radhakrishnan Nair
Full title: A remark on the distribution of Chebyshev polynomials on $[-1,1]$
Publisher: Uniform distribution theory, The Journal of Slovak Academy of Sciences
Date of publication: 14 July 2014 online
DOI: <https://pcwww.liv.ac.uk/~karpenk/JournalUDT/vol09/no2/08ChanNair.pdf>

Abstract and articles published in conferences proceedings, books and thesis:

1. Authors's names in order: **Lax Chan**, Bernard W. Silverman
Full title: A bootstrap approach to account for model selection in Multiple Systems Estimation
Publisher: Part of Italian Statistical Society Series on Advances in Statistics, Springer
Status: Accepted in 2024
Electronic ISSN: 3059-2143
2. Authors's names in order: Enea G. Bongiorno, **Lax Chan**, Aldo Goia
Full title: Studying a mixture of functional data having different complexity
Publisher: Part of Italian Statistical Society Series on Advances in Statistics, Springer
Status: Accepted in 2024
Electronic ISSN: 3059-2143
3. Authors's names in order: Enea G. Bongiorno, **Lax Chan**, Aldo Goia
Full title: Confidence Interval for the complexity index of functional data
Publisher: Part of Italian Statistical Society Series on Advances in Statistics, Springer
Status: Accepted in 2024
Electronic ISSN: 3059-2143
4. Authors's names in order: Enea G. Bongiorno, **Lax Chan**, Aldo Goia

Full title: Non-parametric dimensionality detection for functional data
Publisher: Published by the IASC
Status: Published in 2023
ISBN: 9789073592414

5. Authors's names in order: **Lax Chan**, Aldo Goia
Full title: On specifying a link function of a single functional index model
Publisher: Published by the IASC
Status: Published in 2023
ISBN: 9789073592414
6. Authors's names in order: **Lax Chan**, Aldo Goia
Full title: Goodness-of-fit test for the Single Functional Index Model
Publisher: Pearson education resources, Italia
Status: Published in 2023
ISBN: 9788891935632
7. Authors's names in order: **Lax Chan**
Full title: A specification test for the single functional index model
Publisher: ECOSTA ECONOMETRICS AND STATISTICS
Status: Published in 2022
ISBN: 9789925781263
8. Authors's names in order: Enea G. Bongiorno, **Lax Chan**, Aldo Goia
Full title: Evaluating the complexity of a Functional Time Series
Publisher: ECOSTA ECONOMETRICS AND STATISTICS
Status: Published in 2021
ISBN: 9789925781256
9. Authors's names in order: Enea G. Bongiorno, **Lax Chan**, Aldo Goia, Phillip Vieu
Full title: About the complexity of a Functional Time Series
Publisher: Compiled by the scientific committee of International workshop on functional and operatorial statistics
Status: Published in 2021
Link: <https://iwfos2021.sci.muni.cz/media/3326670/iwfos2021-book-of-abstracts.pdf>
10. Authors's names in order: **Lax Chan**, Uwe Grimm
Full title: Substitution-based sequences with absolutely continuous diffraction
Publisher: Journal of Physics: conferences series IOP science
Status: Published in 2017
DOI: 10.1088/1742-6596/809/1/012027

Date 18/07/2024

Place Milano, Italia

Kwo Lik Lax Chan

PERSONAL INFORMATION

Date of birth: 07/07/1991

Address: Dipartimento di Studi per l'Economia e l'Impresa Università del Piemonte Orientale "A. Avogadro" Via Perrone, 18 - 28100 Novara

RESEARCH INTERESTS

- Functional data analysis
- U -statistics
- Time series analysis
- Multiple systems estimation
- Multivariate statistics/ Data analytics

PRESENT POSITION

Assistant professor (RTD-A)

02/2022-06/2024 |

DISEI, UNIVERSITÀ DEL PIEMONTE ORIENTALE "A. AVOGADRO", ITALY

Research theme: Small-Ball probability, Functional data analysis

Scientific advisers: Prof. Enea Bongiorno, Professor Aldo Goia

Tenured assistant professor in Statistics

07/2024- |

SCHOOL OF MATHEMATICS, UNIVERSITY OF BIRMINGHAM, UNITED KINGDOM

PAST POSITIONS

Postdoctoral associate

09/2020-01/2022 |

DISEI, UNIVERSITÀ DEL PIEMONTE ORIENTALE "A. AVOGADRO", ITALY

Research theme: Small-Ball probability, Functional data analysis

Scientific advisers: Prof. Enea Bongiorno, Professor Aldo Goia

Research Associate

09/2019-03/2020 |

KNOWLEDGE MEDIA INSTITUTE, THE OPEN UNIVERSITY, MILTON KEYNES, UNITED KINGDOM

Research theme: Time-series analysis, Factorial Hidden Markov Models, Combinatorial optimisation, Data analytics

Scientific adviser: Dr. Danica Greetham

Research fellow

08/2018-07/2019 |

RIGHTS LAB AT THE UNIVERSITY OF NOTTINGHAM, UNITED KINGDOM

Research theme: Multiple systems estimation, Capture-Recapture, heterogeneity, data analytics

Scientific adviser: Sir Bernard W. Silverman, Fellow of the Royal Society

Research assistant

08/2017-08/2018 |

HORIZON INSTITUTE AT THE UNIVERSITY OF NOTTINGHAM, UNITED KINGDOM

Research theme: Clustering, classification, stochastic processes, Bayesian inference

Scientific advisers: Dr. Iker Perez, Dr. Mercedes Torres Torres

EDUCATION

Doctor of Philosophy in Mathematics

2014-2018 |

THE OPEN UNIVERSITY, MILTON KEYNES, UNITED KINGDOM

Thesis title: Continuous spectra for substitution-based sequences

Supervisors: Prof. Uwe Grimm and Dr. Ian Short

Master of Science in Mathematics

2013-2014 |

PUBLICATION IN REVIEWED JOURNALS

BOOTSTRAPPING MULTIPLE SYSTEMS ESTIMATES TO ACCOUNT FOR MODEL SELECTION

Bernard W. Silverman, Lax Chan, Kyle Vincent

Statistics and Computing **34 (44)** (2024)

DETECTING THE COMPLEXITY OF A FUNCTIONAL TIME SERIES

Enea G. Bongiorno, Lax Chan, Aldo Goia

Journal of Nonparametric Statistics (2023)

A LINK FUNCTION SPECIFICATION TEST IN THE SINGLE FUNCTIONAL INDEX MODEL

Lax Chan, Laurent Delsol, Aldo Goia

Advances in Data Analysis and Classification (2023)

MULTIPLE SYSTEMS ESTIMATION FOR SPARSE CAPTURE DATA: INFERENTIAL CHALLENGES WHEN THERE ARE NON-OVERLAPPING LISTS

Lax Chan, Bernard W. Silverman, Kyle Vincent

Journal of American Statistical Association (Theory and methods) **116 (535)** (2021), 1297-1306

DISCUSSION OF MULTIPLE SYSTEMS ANALYSIS FOR THE QUANTIFICATION OF MODERN SLAVERY: CLASSICAL AND BAYESIAN APPROACHES BY SILVERMAN

Ian Dryden, James Goulding, Simon Preston, Lax Chan

Journal of the Royal Statistical Society: Series A **183** (2020)

SUBSTITUTION-BASED STRUCTURES WITH ABSOLUTELY CONTINUOUS SPECTRUM

Lax Chan, Uwe Grimm, Ian Short

Indagationes Mathematicae **29(4)** (2018), 1072-1086

SPECTRUM OF A RUDIN--SHAPIRO-LIKE SEQUENCE

Lax Chan, Uwe Grimm

Advances in Applied Mathematics **87** (2017), 16-23

PROBLEMS IN STRONG UNIFORM DISTRIBUTION

Kwo Chan¹, Radhakrishnan Nair

Tatra Mt. Math. Publ. **59** (2014), 51-64

A REMARK ON THE DISTRIBUTION OF CHEBYSHEV POLYNOMIALS ON $[-1, 1]$

Kwo Chan, Radhakrishnan Nair

Uniform Distribution Theory **9** (2014), no.2, 125-134

CONFERENCE PROCEEDINGS, ABSTRACT IN BOOKS AND CONFERENCES, AND THESIS

TESTING LINEARITY IN THE SINGLE FUNCTIONAL INDEX MODEL FOR DEPENDENT DATA

Lax Chan, Aldo Goia

Resubmitted under minor revision in Book of "Studies in Classification, Data Analysis and Knowledge Organization" (2024)

A BOOTSTRAP APPROACH TO ACCOUNT FOR MODEL SELECTION IN MULTIPLE SYSTEMS ESTIMATION

Lax Chan, Bernard W. Silverman

Accepted in Book of short papers of the 52nd Scientific meeting of the Italian Statistical Society (2024)

STUDYING A MIXTURE OF FUNCTIONAL DATA HAVING DIFFERENT COMPLEXITY

Enea G. Bongiorno, Lax Chan, Aldo Goia

Accepted in Book of short papers of the 52nd Scientific meeting of the Italian Statistical Society (2024)

¹This was my registered name when I was at the University of Liverpool.

CONFIDENCE INTERVAL FOR THE COMPLEXITY INDEX OF FUNCTIONAL DATA

Enea G. Bongiorno, Lax Chan, Aldo Goia

Accepted in Book of short papers of the 52nd Scientific meeting of the Italian Statistical Society (2024)

NON-PARAMETRIC DIMENSIONALITY DETECTION FOR FUNCTIONAL DATA

Enea G. Bongiorno, Lax Chan, Aldo Goia

In Book of Abstracts of the 25th International Conference on Computational Statistics (COMPSTAT) (2023)

ON SPECIFYING A LINK FUNCTION OF A SINGLE FUNCTIONAL INDEX MODEL

Lax Chan

In Book of Abstracts of the 25th International Conference on Computational Statistics (COMPSTAT) (2023)

GOODNESS-OF-FIT TEST FOR THE SINGLE FUNCTIONAL INDEX MODEL

Lax Chan, Aldo Goia

Book of Short Papers - CLADAG 2023 [in press]

A SPECIFICATION TEST FOR THE SINGLE FUNCTIONAL INDEX MODEL.

Lax Chan

In Book of Abstracts of the 15th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics)(2022)

EVALUATING THE COMPLEXITY OF A FUNCTIONAL TIME SERIES

Enea G. Bongiorno, Lax Chan, Aldo Goia

In Book of Abstracts of the 14th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics)(2021)

ABOUT THE COMPLEXITY OF A FUNCTIONAL TIME SERIES

Enea G. Bongiorno, Lax Chan, Aldo Goia, Philippe Vieu

In Book of Abstracts of the 5th International Workshop On Functional and Operatorial Statistics (2021)

CONTINUOUS SPECTRA FOR SUBSTITUTION-BASED SEQUENCES

Lax Chan

PhD thesis (2018)

SUBSTITUTION-BASED SEQUENCES WITH ABSOLUTELY CONTINUOUS DIFFRACTION

Lax Chan, Uwe Grimm

Journal of Physics: conference series, 809 (2017) 012027

TECHNICAL REPORT

ON BAYESIAN INFERENCE TASKS WITH INFINITE-STATE JUMP PROCESSES: EFFICIENT DATA AUGMENTATION

Iker Perez, Lax Chan, Mercedes Torres Torres, James Goulding, Theodore Kypraios

arXiv: 1806.02458

R PACKAGES

SPARSEMSE 2.0.1

Lax Chan (maintainer and creator), Bernard W. Silverman, Kyle Vincent

INVITED TALKS AND SEMINARS

A link function specification test in semi-parametric regression

07/09/2023 |

DATA SCIENCE AND COMPUTATIONAL STATISTICS SEMINAR, UNIVERSITY OF BIRMINGHAM, UK

On specifying a link function of a single functional index model

22-25/08/2023 |

INVITED TALK AT THE 25TH INTERNATIONAL CONFERENCE ON COMPUTATIONAL STATISTICS, LONDON

Goodness-of-fit test for the Single Functional Index Model

04/07/2023 |

SEMINARI DI MATEMATICA E STATISTICA, UNIVERSITÀ DEL PIEMONTE ORIENTALE, ITALY

A specification test for the single functional index model

17-19/12/2022 |

INVITED TALK AT THE 15TH INTERNATIONAL CONFERENCE OF THE ERCIM WG ON COMPUTATIONAL AND METHODOLOGICAL STATISTICS (CMSTATISTICS), LONDON

On the complexity index of a functional time series 20-24/06/2022 |

INVITED TALK AT THE INTERNATIONAL SYMPOSIUM OF NONPARAMETRIC STATISTICS, PATHOS, CYPRUS

Evaluating the complexity of a Functional Time Series 18-20/12/2021 |

INVITED TALK AT THE 14TH INTERNATIONAL CONFERENCE OF THE ERCIM WG ON COMPUTATIONAL AND METHODOLOGICAL STATISTICS (CMSTATISTICS), ONLINE

Substitution-based structures with absolutely continuous spectrum 29/03/2017 |

INVITED TALK AT OPEN STATISTICAL PHYSICS, MILTON KEYNES, UK

Diffraction spectrum of a Rudin--Shapiro-like sequence 07/06/2016 |

PLENARY TALK, TRANSVERSAL ASPECTS OF TILINGS AT OLÉRON, FRANCE

CONTRIBUTED TALKS AND POSTER PRESENTATIONS

A bootstrap approach to account for model selection in Multiple Systems Estimation 17-20/06/2024 |

CONTRIBUTED TALK AT THE 52ND SCIENTIFIC MEETING OF THE ITALIAN STATISTICAL SOCIETY (2024), BARI, ITALY

Goodness-of-fit test for the Single Functional Index Model 11-13/09/2023 |

CONTRIBUTED TALK AT THE 14TH SCIENTIFIC MEETING CLASSIFICATION AND DATA ANALYSIS GROUP, SALERNO, ITALY

About the complexity of a Functional Time Series 23/06/2021 |

CONTRIBUTED TALK AT THE INTERNATIONAL WORKSHOP FOR FUNCTIONAL AND OPERATORIAL STATISTICS, ONLINE

Inflation-based sequences with absolutely continuous spectrum 16-24/09/2016 |

POSTER PRESENTATION AT INTERNATIONAL CONFERENCE ON QUASICRYSTALS, KATHMANDU, NEPAL

MEMBER OF INTERNATIONAL WORKING GROUP

COST Action CA21163 "HiTEc", "Text, functional and other high-dimensional data in econometrics: New models, methods, applications" 2022-2026 |

GRANT FUNDED BY EUROPEAN UNION

Responsive Algorithmic Enterprise: Energy management system for SMEs 09/2019-03/2020 |

KNOWLEDGE MEDIA INSTITUTE, THE OPEN UNIVERSITY, MILTON KEYNES, UNITED KINGDOM

FUNDED EXTERNALLY BY AND TECHNOLOGY AND RESEARCH

Principal investigator: Dr. Danica Greetham

Data and Measurement Programme 08/2018-07/2019 |

RIGHTS LAB AT THE UNIVERSITY OF NOTTINGHAM, UNITED KINGDOM

FUNDED BY THE UNIVERSITY OF NOTTINGHAM BEACON OF EXCELLENCE PROGRAMME

Principal investigators: Professor Doreen Boyd, Sir Bernard W. Silverman, Fellow of the Royal Society

GRANTS AND AWARDS

FSE REACT-EU, PON Ricerca e Innovazione 2014-2020 2022-2025 |

GRANT FUNDED BY EUROPEAN UNION

- Young scientist award to attend International conference on Quasicrystals 2016
- Partial funding to attend thematic month at Oléron, France 2016
- Fully funded studentship with stipend 2014-2017
- Liverpool affinity award 2013-2014
- Faculty of physical sciences and engineering postgraduate scholarship 2013-2014
- Departmental scholarship for M.Sc. students 2013-2014
- University of Liverpool regional award 2010-2013

SUPERVISION

Mentored German exchange student Marcus Voss on energy disaggregation project

2019 |

KNOWLEDGE MEDIA INSTITUTE, THE OPEN UNIVERSITY

- I co-supervised Marcus with Dr. Danica Greetham on energy disaggregation. During his time here, he implemented deep learning algorithms on energy disaggregation. His results formed part of our report back to the industry partner.

Mentored French exchange student Nicolas Laube on aperiodic tiling

2017 |

SCHOOL OF MATHEMATICS AND STATISTICS, THE OPEN UNIVERSITY

- Organized meeting and planned goals to be achieved during his stay. Discussed with him on his weekly reading. Assessed his progress made each week. He produced a report and Python code that generated aperiodic tilings.

TEACHING EXPERIENCE

Course leader and lecturer

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UNIVERSITA DEL PIEMONTE ORIENTALE

1. 2022-2023, 2023-2024 Statistics for finance (Master level) (60 hours) 8 ECTS
 - Scientific sector: SECS-S/01
 - Duties: Preparation of lecture slides, homework sheets and solutions, R codes, exams and management of teaching website. Delivery of lectures and R tutorials and exam marking and oral evaluation
 - Number of students: around 30 students
2. 2023-2024 Laboratorio di Statistica in(Statistics laboratory) (Bachelor level course in Italian) (40 hours) 2 ECTS
 - Scientific sector: SECS-S/01
 - Preparation of homework sheets and solutions and management of teaching website. Delivery of lectures.
 - Number of students: around 300 students

Teaching assistant to Prof. Aldo Goia

2021-2022 |

UNIVERSITA DEL PIEMONTE ORIENTALE

- Statistics for finance (Master level) (60 hours).

Teaching assistant to Prof. Uwe Grimm

2014-2015 |

LONDON TAUGHT COURSE CENTRE'S PHD COURSE

- Aperiodic order: Marking assignments (10 hours) and assisting in tutorials (2.5 hours).

Teaching assistant to the following undergraduate/postgraduate courses

2013-2014 |

THE UNIVERSITY OF LIVERPOOL

- Calculus I (first year): Teaching in tutorials (10 hours) and marking assignments (25 hours)
- Calculus II (first year): Teaching in tutorials (10 hours) and marking assignments(20 hours)
- Introduction to Statistics (first year): Teaching in tutorials (5 hours)
- Complex functions (Second year): Teaching in tutorials (10 hours) and marking assignments (20 hours)
- Geometry of curves (third year): Teaching in tutorials (5 hours) and marking assignments (15 hours)
- Group theory (third year): Teaching in tutorials (5 hours) and marking assignments (10 hours)
- Analysis and number theory (third year): Teaching in tutorials (10 hours)

COURSE MATERIAL DESIGN ASSISTANCE

Professor Uwe Grimm's course: Aperiodic order

2014-2015 |

LONDON TAUGHT COURSE CENTRE

- I proof-read his online slides and homework. Further, I proof-read and gave suggestion to a condensed version of his course material which later became a chapter in the book *Dynamical and Complex Systems, LTCC Advanced Mathematics Series volume 5*.

Online course material (textbooks)

2014-2015 |

SCHOOL OF MATHEMATICS AND STATISTICS, THE OPEN UNIVERSITY

- I proof-read, went through textbooks material and provided feedback for M337 Complex analysis and MST124 Essential Mathematics I. The latest version of the textbook materials are now in print.

GRANTS REVIEW EXPERIENCE

- UK research and innovation future leaders fellowships (2023)

REFeree FOR JOURNALS

- Computational Statistics
- Statistics and Computing

ORGANISATION OF SESSIONS IN CONFERENCES

Advances in functional data analysis, Joint with Prof. Enea Bongiorno

27-30/08/2024 |

ORGANISED SESSION AT THE 26TH INTERNATIONAL CONFERENCES ON COMPUTATIONAL STATISTICS, GIESSEN, GERMANY

Advances in functional data: Theory and applications, Joint with Prof. Enea Bongiorno

22-25/08/2023 |

ORGANISED SESSION AT THE 25TH INTERNATIONAL CONFERENCES ON COMPUTATIONAL STATISTICS, LONDON, UNITED KINGDOM

DEPARTMENTAL ADMINISTRATION

Committee for evaluation of applications of contracted professors or teachers

2022-present |

DiSEI, UNIVERSITÀ DEL PIEMONTE ORIENTALE "A. AVOGADRO"

Committee for evaluation of English capability for entry to master level courses

2022-present |

DiSEI, UNIVERSITÀ DEL PIEMONTE ORIENTALE "A. AVOGADRO"

Founder and coordinator of postgraduate students seminar

2014-2017 |

SCHOOL OF MATHEMATICS AND STATISTICS, THE OPEN UNIVERSITY

Student chair of modules and teaching review committee

2010-2013 |

THE UNIVERSITY OF LIVERPOOL

- Led a team of seven to process students reviews of all the courses the department offered. Wrote summary reports and delivered them to lecturers. Presented findings to the student-staff committee and lead to better teaching qualities.

MEMBERSHIP IN SOCIETIES

- Member of Gruppo Nazionale per l'Analisi Matematica, la Probabilità e le loro Applicazioni, InDAM
- Member of the Società Italiana di Statistica
- Fellow of the Royal Statistical Society

COMPUTER SKILLS

- R (with experience of writing CRAN approved package)
- Python (Implemented Factorial Hidden Markov Models and Combinatorial optimisation on energy data set)
- Matlab (Implemented state of the art classification algorithms)
- \LaTeX (Articles and report writing)

LANGUAGE SKILLS

- Mother tongue: Cantonese
- Other languages: English, Italian.