

# Yudong CHEN

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Columbia House, London School of Economics and Political Science  
Houghton Street, London, WC2A 2AE, United Kingdom

## EMPLOYMENT

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### Research officer in Statistics

November 2021 – present

Department of Statistics, London School of Economics and Political Science

Hosted by Dr. Tengyao Wang, under his EPSRC grant on ‘Change-point analysis in high dimensions’.

## EDUCATION

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### University of Cambridge, United Kingdom

PhD student in Statistics

2018 – 2022

Supervisors: Prof. Richard J. Samworth (Cambridge) and Dr. Tengyao Wang (UCL, LSE)

Projects: Develop online algorithm for a high-dimensional changepoint detection problem, provide theoretical guarantees and evaluate numerical performance; conduct statistical inference on the changepoint; calculate lower bound; provide nonparametric approach to this problem.

Other Affiliation: Cantab Capital Institute for the Mathematics of Information (CCIMI)

College membership: Peterhouse

B.A. and MMath

2014 – 2018

Results: First class (B.A.) and Distinction (MMath)

### Tsinghua University, Beijing, China

2013 – 2014

Major: Pure and Applied Mathematics

## RESEARCH INTERESTS

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Changepoint detection, sequential testing, high-dimensional statistics, online algorithms and machine learning

## PREPRINTS & PUBLICATIONS

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Chen, Y., Wang, T. and Samworth, R. J. (2022+) Inference in high-dimensional online changepoint detection. *arXiv preprint*, arxiv:2111.01640.

Chen, Y., Wang, T. and Samworth, R. J. (2022) High-dimensional, multiscale online changepoint detection. *J. Roy. Statist. Soc., Ser. B*, **84**, 234–266. The accompanying **R** package **ocd** is available from CRAN.

Chen, Y., Chernov, R., Flores, M., Bourque, M. F., Lee, S. and Yang, B. (2018) Toy Teichmüller spaces of real dimension 2: the pentagon and the punctured triangle. *Geom. Dedicata*, **197**, 193–227.

## TALKS

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IMS Annual Meeting, London

June 2022

StatScale Seminar, Lancaster (online)

June 2020

Research Students’ Conference in Probability and Statistics, Exeter

June 2019

## EXPERIENCE

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### Statistics Clinic consultant/organiser

October 2018 – December 2021

Offering free statistical consulting service to university members from different departments including chemistry, criminology, economics, education, engineering, medicine, etc. to assist with their research.

Responsible for organising clinic sessions, coordinating helpers, responding to queries from clients, collecting feedback and updating the clinic website.

### Undergraduate supervisor

October 2018 – June 2021

Small-scale undergraduate teaching

Courses: IB Statistics (second-year course), II Principles of Statistics (third-year course)

### Teaching assistant for APTS

December 2019

Assisting with the practical sessions of a statistical computing course. The Academy for PhD Training in Statistics (APTS) organises courses for first-year PhD students in statistics and probability in the UK.

### Part III drop-in session helper

October 2018 – March 2019

Answering questions from master students about course material.  
Courses: Modern Statistical Methods, Statistical Learning in Practice, Convex Optimisation

**Research Student, Fields Undergraduate Summer Research Program** *July – August 2016*  
Worked with a supervisor and four other students to study various properties of  $T_5$  (Teichmüller space of a disk with 5 marked points on the boundary). Proved several convexity properties of  $T_5$  and compared  $T_5$  with the Hilbert Metric on a regular pentagon.

**Peterhouse Mathematics Subject Representative** *July 2015 – June 2016*  
Organized regular teas and discussions among mathematics students in the college; edited the Peterhouse Mathmos Freshers Guide and arranged subject orientation for first year students.

**Teaching Assistant for Harvard Summit for Young Leaders in China (HSYLC)** *August 2015*  
Designing and supporting a Harvard-style seminar on Case Studies in Modern Architecture, as well as leading a 30-student team in a series of intensive leadership and teamwork challenges. HSYLC is a 9-day 600-student Harvard’s largest summer educational program of its kind in Asia.

## SCHOLARSHIPS & AWARDS

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Smith–Knight Essay Prize, University of Cambridge	<i>2020</i>
Jardine Foundation Scholarship, Jardine Matheson	<i>2014 - 2018</i>
Henry Cavendish Scholar in Mathematics, Peterhouse	<i>2017</i>
Senior Burkill Prize for Mathematics, Peterhouse	<i>2016 - 2017</i>

## SKILLS & OTHER

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**Academic service:** Reviewer for Annals of Applied Statistics, Annals of Statistics, Biometrika, Journal of the Royal Statistical Society Series B

**Programming:** R, Matlab, Python, C++, L<sup>A</sup>T<sub>E</sub>X

**Language:** English (fluent) and Mandarin (native)

**Statistics and Sports:** Big fan of analysing data in sports including baseball, American football and tennis

**Hobbies:** Piano, Swimming, Table tennis, Baseball, Travelling