

## Haotian Xu

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<b>Academic Position</b>	<b>SNSF Postdoc.Mobility Fellow</b> , Université catholique de Louvain, Belgium • Advisor: Prof. Johan Segers	06/2022-
	<b>Postdoctoral Researcher</b> , University of Warwick, UK • Advisor: Prof. Yi Yu	08/2021-05/2022
<b>Education</b>	<b>Ph.D in Statistics</b> , University of Geneva, Switzerland • Thesis: Contributions to time series analysis • Advisor: Prof. Maria-Pia Victoria-Feser, Prof. Stéphane Guerrier	08/2015-07/2021
	<b>M.Sc in Statistics</b> , University of Illinois at Urbana-Champaign, USA	01/2014-05/2015
	<b>M.Sc in Applied Statistics</b> , Dongbei University of Finance and Economics, China • Thesis: Bayesian analysis for ordinal categorical data	09/2011-07/2013
	<b>Bachelor in Statistics</b> , Anhui University of Finance and Economics, China • Thesis: Optimization of hospital beds arrangement based on Poisson Process	09/2007-07/2011
<b>Publications</b>	Yu, Y., Chatterjee S., & <b>Xu, H.</b> , “ <i>Localising change points in piecewise polynomials of general degrees</i> ”, Electronic Journal of Statistics, 16(1), 1855-1890, 2022.	
	Guerrier, S., Molinari, R., Victoria-Feser, M. P., & <b>Xu, H.</b> , “ <i>Robust two-step wavelet-based inference for time series models</i> ”, Journal of the American Statistical Association, 2021.	
	Guerrier, S., Jurado, J., Khaghani, M., Bakalli, G., Karemera, M., Molinari, R., Orso, S., Raquet, J., Kabban, C.M.S., Skaloud, J., <b>Xu, H.</b> , & Zhang, Y., “ <i>Wavelet-based moment-matching techniques for inertial sensor calibration</i> ”, IEEE Transactions on Instrumentation and Measurement, 69(10), 7542-7551, 2020.	
	<b>Xu, H.</b> , Guerrier, S., Molinari, R., & Karemera, M., “ <i>Multivariate signal modeling with applications to inertial sensor calibration</i> ”, IEEE Transactions on Signal Processing, 67(19), 5143-5152, 2019.	
	Branca, M., Orso, S., Molinari, R., <b>Xu, H.</b> , Guerrier, S., Zhang, Y., & Mili, N., “ <i>Is nonmetastatic cutaneous melanoma predictable through genomic biomarkers?</i> ”, Melanoma Research, 28(1), 21-29, 2018.	
	<b>Xu, H.</b> , Guerrier, S., Molinari, R., & Zhang, Y., “ <i>A study of the Allan variance for constant-mean non-stationary processes</i> ”, IEEE Signal Processing Letters, 24(8), 1257-1260, 2017.	
<b>Working papers</b>	Dubey, P., <b>Xu, H.</b> , & Yu, Y., “ <i>Online network change point detection with missing values</i> ”. (2021) arXiv preprint.	
	<b>Xu, H.</b> , Ke, Y., Guerrier, S., & Li, R. “ <i>Nonasymptotic theories for tail-robust autocovariance matrix estimation methods</i> ”.	
	Xiao, D., <b>Xu, H.</b> , & Ke, Y., “ <i>Multiple change points detection problems for high-dimensional time series</i> ”.	

<b>Proceedings</b>	Zhang, Y., <b>Xu, H.</b> , Radi, A., Molinari, R., Guerrier, S., Karemera, M., & El-Sheimy, N., “ <i>An optimal virtual inertial sensor framework using wavelet cross covariance</i> ”, In 2018 IEEE/ION Position, Location and Navigation Symposium (PLANS) (1342-1350).
<b>Ebooks</b>	Guerrier, S., Molinari, R., <b>Xu, H.</b> & Zhang, Y., “ <i>Applied Time Series Analysis with R</i> ”, full text: <a href="https://smac-group.github.io/ts/">https://smac-group.github.io/ts/</a> .
<b>Statistical Softwares</b>	<p><b>“changepoints” - R package:</b> performs a series of offline and/or online change-point detection algorithms for numerous settings. Available on CRAN. <a href="https://github.com/HaotianXu/changepoints">https://github.com/HaotianXu/changepoints</a>.</p> <p><b>“rcov” - R package:</b> collection of tools for estimating robust autocovariance matrix for high-dimensional time series. <a href="https://github.com/HaotianXu/rcov">https://github.com/HaotianXu/rcov</a>.</p> <p><b>“avar” - R package:</b> implements the allan variance and allan variance linear regression estimator for time series models. Available on CRAN. <a href="https://github.com/SMAC-Group/avar">https://github.com/SMAC-Group/avar</a>.</p>
<b>Grant</b>	Swiss National Science Foundation (SNSF) Postdoc.Mobility Fellowship (CHF 98,600, 24-month)
<b>Presentations</b>	<p>“<i>Change point localisation and inference in high-dimensional regression models under dependence</i>”, ICMS workshop: Structural Breaks and Shape Constraints, Edinburgh, 05/2022.</p> <p>“<i>Robust Estimation of Large Autocovariance Matrices</i>”, 2021 ICSA Applied Statistics Symposium, on-line, 09/2021.</p> <p>“<i>Robust Estimation of Large Autocovariance Matrices</i>”, Statistics seminars, Université catholique de Louvain, 05/2021.</p> <p>“<i>Long-run Covariance Matrix Estimator for High-dimensional Time Series</i>”, The 3rd International Conference on Econometrics and Statistics, National Chung Hsing University, Taiwan, Invited talk, 06/2019.</p> <p>“<i>A GMWM-based Inference for Correlated Latent Processes</i>”, 2017 IMS-China International Conference on Statistics and Probability, Guangxi University For Nationalities, China, Invited talk, 06/2017.</p> <p>“<i>A Wavelet-based Test for Serial Correlation</i>”, The 10th ICSA International Conference, Shanghai Jiao Tong University, China, Contributed talk, 12/2016.</p>
<b>Referee Experience</b>	<p>Biometrika</p> <p>AISTATS</p>
<b>Academic Visits</b>	<p>Visiting student at University of Illinois at Urbana-Champaign, Feb–Jun 2016, Feb-May 2017</p> <p>Visiting student at Pennsylvania State University, Feb–Jun 2018</p>
<b>Research interests</b>	Time series, robust statistics, high dimensional statistics, change-point problems, extreme value theory.
<b>Teaching experience</b>	<p><b>Teaching Assistant:</b> responsible for giving weekly recitation lectures/office hours, exam preparation and grading.</p> <p>- Statistical Modeling (undergraduate), University of Geneva, Fall 2015-2020</p>

- Business Analytics (undergraduate), University of Geneva, Fall 2016-2017
- Numerical Methods (undergraduate), University of Geneva, Fall 2020
- Statistics I (undergraduate), University of Geneva, Fall 2015-2020
- Mixed Linear Models (graduate), University of Geneva, Fall 2016-2019

**Skills**

**Languages:** Chinese (native); English (working language); French (elementary).

**Computer Programming and Statistical Software:** C++, R, SAS, Matlab, Python

**Professional  
Experience**

**Statistician**, IMS Health, Beijing, China, 10/2013–01/2014: Design statistical methods to investigate the causes of changes in trend of Rx data in mail order, retail order and longtime-care order. Programmed SAS, SQL and JCL code to manipulate Rx data and generate reproducible report.