

Haotian Xu

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Academic Position	Postdoctoral Researcher , University of Warwick, UK • Advisor: Prof. Yi Yu	08/2021-present
Education	Ph.D in Statistics , University of Geneva, Switzerland • Thesis: Contributions to time series analysis • Advisor: Prof. Maria-Pia Victoria-Feser, Prof. Stéphane Guerrier	08/2015-07/2021
	M.Sc in Statistics , University of Illinois at Urbana-Champaign, USA	01/2014-05/2015
	M.Sc in Applied Statistics , Dongbei University of Finance and Economics, China • Thesis: Bayesian analysis for ordinal categorical data	09/2011-07/2013
	Bachelor in Statistics , Anhui University of Finance and Economics, China • Thesis: Optimization of hospital beds arrangement based on Poisson Process	09/2007-07/2011
Publications	Yu, Y., Chatterjee S., & Xu, H. , “ <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., & Xu, H. , “ <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., Xu, H. , & Zhang, Y., “ <i>Wavelet-based moment-matching techniques for inertial sensor calibration</i> ”, IEEE Transactions on Instrumentation and Measurement, 69(10), 7542-7551, 2020.	
	Xu, H. , 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., Xu, H. , Guerrier, S., Zhang, Y., & Mili, N., “ <i>Is nonmetastatic cutaneous melanoma predictable through genomic biomarkers?</i> ”, Melanoma Research, 28(1), 21-29, 2018.	
	Xu, H. , 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.	
Working papers	Dubey, P., Xu, H. , & Yu, Y., “ <i>Online network change point detection with missing values</i> ”. (2021) arXiv preprint.	
	Xu, H. , Ke, Y., Guerrier, S., & Li, R. “ <i>Nonasymptotic theories for tail-robust autocovariance matrix estimation methods</i> ”.	
	Xiao, D., Xu, H. , & Ke, Y., “ <i>Multiple change points detection problems for high-dimensional time series</i> ”.	
Proceedings	Zhang, Y., Xu, H. , 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).	

Ebooks	Guerrier, S., Molinari, R., Xu, H. & Zhang, Y., “ <i>Applied Time Series Analysis with R</i> ”, full text: https://smac-group.github.io/ts/ .
Statistical Softwares	<p>“changepoints” - R package: performs a series of offline and/or online change-point detection algorithms for numerous settings. Available on CRAN. https://github.com/HaotianXu/changepoints.</p> <p>“rcov” - R package: collection of tools for estimating robust autocovariance matrix for high-dimensional time series. https://github.com/HaotianXu/rcov.</p> <p>“avar” - R package: implements the allan variance and allan variance linear regression estimator for time series models. Available on CRAN. https://github.com/SMAC-Group/avar.</p>
Presentations	<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>
Academic Visits	<ul style="list-style-type: none"> - Visiting student at University of Illinois at Urbana-Champaign, Feb–Jun 2016, Feb-May 2017 - Visiting student at Pennsylvania State University, Feb–Jun 2018
Research interests	Time series, robust statistics, high dimensional statistics, heavy tails, limit theory, empirical processes, signal processing, change-point detection.
Teaching experience	<p>Teaching Assistant: responsible for giving weekly recitation lectures/office hours, exam preparation and grading.</p> <ul style="list-style-type: none"> - Statistical Modeling (undergraduate), University of Geneva, Fall 2015-2020 - 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	<p>Languages: Chinese (native); English (working language); French (elementary).</p> <p>Computer Programming and Statistical Software: C++, R, SAS, Matlab, Python</p>
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.