Shih-Kang Chao

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Contact Information

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Research Interests

Nonparametric regression, high-dimensional regression and inference, functional data analysis, multiple testing

Education

Humboldt University of Berlin, Berlin, Germany

Ph.D. Candidate, Statistics, October 2011 (expected graduation date: July 2015)

- Dissertation Topic: "Three essays in quantile regression"
- Advisors: Wolfgang Härdle and Markus Reiss

National Taiwan University, Taipei, Taiwan

M.B.A. Financial Engineering, June, 2011

National Taiwan University, Taipei, Taiwan

B.A. Finance; *Minor Mathematics*, June, 2008

Honors and Awards

Scholarship of Berlin Doctoral Program in Economics and Management Science (BDPEMS) (three-year funding), Germany

Honorable fellowship of the Phi Tau Phi Scholastic Honor Society (award top 3% student in class), Republic of China (Taiwan)

Academic Experience

Humboldt University of Berlin, Berlin, Germany

Graduate Student **October, 2011 - present**

Current Ph.D. research, Ph.D. level coursework, research/consulting projects, editing and contributing to the content of the book until publication:
Basics of Modern Mathematical Statistics: Exercises and Solutions, Springer, 2014,
and academic service:

- Haindorf Seminar, Feb 7-10, 2014, Hejnice, Czech Republic
- Haindorf Seminar, Feb 6-9, 2013, Hejnice, Czech Republic
- International Research Training Group (IRTG) evaluation, Sep. 2012, Berlin, Germany.
- Humboldt-Princeton Conference, Oct. 28-29, 2011, Berlin, Germany.

Instructor **April, 2013 - August, 2014**

Co-taught graduate level courses for the Master of Statistics. Shared responsibility for lectures, exams, supervising term paper, and grades.

- Statistical programming language, Summer 2014.
- Statistical tools in finance and insurance, Winter 2013.
- Multivariate analysis, Summer 2013.

Teaching Assistant **April, 2012 - February, 2013**

Gave tutorial lectures of *Statistics* for undergraduate students in business and economics. Shared responsibility for grades.

Publications

Chao, S.-K., Härdle, W. and Wang, W. (2014), Quantile Regression in Risk Calibration, in Lee, C.-F., and Lee, J. C. (eds), *Handbook of Financial Econometrics and Statistics*, Springer, New York.

Working Papers

Chao, S.-K., Proksch, K., Dette, H. and Härdle, W. (2014). Confidence corridors for nonparametric multivariate generalized quantile regression, Arxiv: arxiv.org/abs/1406.4421. Will be resubmitted to *Journal of Business and Economic Statistics.*

Pham-Thu, H., **Chao**, S.-K. and Härdle, W. (2014). Credit Risk Calibration based on CDS Spreads *SFB 649 Discussion Paper 2014-026.*. Submitted to Journal of Empirical Finance.

Papers in preparation

Chao, S.-K., Härdle, W. and Yuan, M. (2014). Nuclear norm regularized large multiple quantile regression. Will be submitted in a few months.

Chao, S.-K. (2014). Simple bootstrap confidence bands for nonparametric quantile regression.

Jirak, M. and **Chao, S.-K.** (2014). Multiple Kolmogorov-Smirnov test for high-dimensional time series data.

Chao, S.-K., Ning, Y. and Liu, H. (2014). On high-dimensional predictive confidence intervals.

Wang, B., **Chao, S.-K.**, Härdle, W., Sheen, J. and Trück, S. (2015). Asymmetries in demogrphic impact on subjective inflation forecast.

Conference Presentations

Chao, S.-K., Härdle, W. and Yuan, M. (2015). Nuclear norm regularized large multiple quantile regression. *Humboldt-Aarhus-Xiamen (HAX) Workshop 2014*, Humboldt University Berlin, Berlin, Germany. October 6-8, 2014. `http://sfb649.wiwi.hu-berlin.de/fedc/events/hax2014`

Chao, S.-K., Proksch, K., Dette, H. and Härdle, W. (2015). Confidence corridors for nonparametric multivariate generalized quantile regression.
- *3rd IMS Asia Pacific Rim Meeting*, Taipei, Taiwan, Jun. 29-Jul. 2, 2014. `ims-aprm2014.tw`
- *SFB 823/649 Workshop "Methods and Challenges in Financial Risk Measurement"*, Druebeck, Germany, May 18-20, 2014. `www.statistik.tu-dortmund.de/index.php?id=1998`

Chao, S.-K., Härdle, W. and Wang, W. (2014). Quantile Regression in Risk Calibration.
- *3rd XMU-Humboldt workshop*, Xiamen University, Xiamen, China. May, 2012.
- *CRC 649 Conference*, Motzen, Germany. February, 2012.

Invited Talks

Student seminar, Department of Statistics and Biostatistics, *Rutgers University*, NJ, U.S.A., Nov. 2014.

Seminar, Institute of Statistics, *National Tsing Hua University (NTHU) and National Chiao Tung University (NCTU)*, Hsinchu, Taiwan, Mar. 2014.

Seminar, Department of Applied Math., *National Sun-Yat-sen University (NSYSU)*, Kaohsiung, Taiwan, Mar. 2014.

Research seminar, chair: Prof. Enno Mammen, *Universität Mannheim*, Germany, Feb. 2014.

Research Visits

Department of Statistics, University of Wisconsin-Madison, WI, U.S.A. Mar. 2015-Apr. 2015

Department of Operational Research and Financial Engineering, Princeton University, NJ, U.S.A. Nov. 2014-Feb. 2015.

Ruhr University Bochum, Bochum, Germany, Aug. 2013.

Refereeing and Reviewing Works

Computational Statistics and Data Analysis, Statistics: a journal of theoretical and applied statistics.

Professional Experience

Yuanta Securities, Taipei, Taiwan
Summer researcher **July, 2010 - August, 2010**
Project in pricing and development of arbitrage strategies for binary options.

Skills

Statistical Packages: R, Mathematica; some experience with Matlab.
Applications: LaTeX, Bloomberg, Datastream database, MS Office.
Language: Chinese Mandarin (native), English (fluent), German (some).

References

Prof. Holger Dette
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