UNIVERSITÉ DE GENÈVE
GENEVA SCHOOL OF ECONOMICS AND MANAGEMENT

Master in Statistics

Past Master theses

2022

LIU Xinwan

DAKOLI Isei

VOEGELI Hervégil

GROGNUZ Olivier

SOUVAIRAN Kia Judith, *Extremal Dependence Modelling of the S&P 500 Stocks: An Application of Methods*, July 2022

ELLO Atchiman Marilyn, *Meta-analyses of survival rates: improving the extraction of the standard errors from reported 95% confidence intervals*, June 2022

LIAROU Margarita, *Time-frequency analysis of EEG signals with cluster-based tests*, February 2022

2021

LEWELLING Chloé, *An Exploration and Application of a Spatio-Temporal Moran's I*, November 2021

GAYER Mihaly, *Mapping the functional connectome traits of epilepsy using independent component analysis*, September 2021

HIRARI Mehdi, *On the use of OT for image analysis: a selective review in machine learning and some related possible developments in statistics*, September 2021

KALEMI Klea, *Alternative Coefficients for Structure Learning in Extremal Tree Models*, September 2021

LOURENCO LEITAO Marco, *Predicting presence of COVID-19 antibodies in Geneva's population using an imbalanced statistical learning framework*, September 2021

FELIX Manon, *Semiparametric estimation for time series: a frequency domain approach based on optimal transportation theory*, July 2021

KLEIN Lukas Alexander, *Interpretability of Disentangled Representations by Explanatory Methods*, July 2021

KONTOGHIORGHES Louisa, *Assessing statistically changes in topic prevalence based on text mining tools*, July 2021

YAZDANI Anthony, *Job Salary Prediction using Neural Language Models, Conformalized Quantile Regression and Transfer Learning*, July 2021

CARRILLO LEON Laura Amaranta, *Residential real estate appraisal using GAMLSS with spatial effect: a case in Bogota*, June 2021

ZAFFORA Biagio, *Portfolio risk measures using classical and machine learning methods*, June 2021

AYMON Romain, *A Robust Approach for Multivariate Heart Rate Variability Analysis*, May 2021

HUESSY Alvaro Gustavo, *Warranty Data Analysis on Patek Philippe's Watches (Confidential, will not be diffused)*, May 2021
DESAULES Marc, *Learned compression algorithms with variational autocoders applied to one dimensional signals*, January 2021

2020

COLIN Samuel, *Video-based heart rate prediction using deep neural networks*, November 2020

CUPE ALEJO Sergio Kenny, *Ordinal Multiple Correspondence Analysis. With an Application to a Composite Indicator of Basic Needs Satisfaction*, November 2020

GENONI Giulia, *Simulation-Based Methods for Internal Estimation of Time Series Models*, September 2020

BÖLLENRÜCHER Mégane, *An application of extreme value theory for facial recognition*, August 2020

DUMONT Roxane, *Hazard maps for strong earthquakes in Switzerland*, August 2020

MITCHELL Victor James, *Time Variation of Regression Coefficients related to Macroeconomic News affecting Currency Prices*, August 2020

SCHUBERT Kieran, *Statistical and Signal Processing Techniques to Improve the On-Road Drag Coefficient Measurement of a Bicycle-Rider Combination*, February 2020

SUTTER Jean, *Shrinkage Methods Comparison in Bioprocess Optimization Context*, January 2020

2019

ROCABADO ARZE Laura, *Deep Reinforcement Learning for a Cart Pole Problem*, September 2019

FLORIANO GONCALVES Lucianna, *Imputation Methods for the Water Temperature Dataset of the Rhône River*, September 2019

KOPELLAJ Nensi, *An analysis of the Smart Stochastic Discount Factor*, August 2019

NUERMAIMAITI Muertizha, *Investigation on the performance of the asymptotic theory for different estimators in Spatial Autoregressive panel data models*, August 2019

BOULAGUIEM Younes, *Learning max-stable distributions with GANs*, July 2019

LEE Minyoung, *Extended Covariance Penalty Criteria for Model Selection in Logistic Regression*, July 2019

MASLEV Alexander, *A study of Bayesian Joint Modelling for Predicting Ventilator-Associated Pneumonia*, February 2019

WANG Hanxiong, *Robust Maximum Likelihood Estimation of Heston Model*, February 2019

CRISTELLI Giulia, *How to tune robust estimators*, January 2019

DONG Ziqing, *Robust Full-epoch Length Single Trial Correction Method for Analyzing EEG data*, January 2019

GALVAN Cecilia, Model Selection for Multinomial Logit Regression Using a Decomposition Strategy, January 2019

KIMBER Talia Beatrice, *Multiplicity of SMILES as means of data augmentation to predict molecular behaviour using convolutional neural networks*, January 2019

2018

BELAHBIB Julien, *Multi-label text classifier case-study for DiploFoundation*, October 2018

JOHNER Louis, *An Agent-Based Model Approach to Real Estate Portfolio Risk Management*, October 2018

VORLET Marine, *Spatiotemporal modelling of Jellyfish distribution in Nova Scotia as an indicator of Leatherback Turtle's critical foraging habitat*, October 2018

KNAFOU Julien, *Sensitivity analysis on a document classification task using recurrent neural network*, July 2018

TRAECHSEL Bastien, *Predicting Frailty and assessing prediction performance of a statistical model*, July 2018

XU Christelle, *Median-of-Means Risk Minimization for Dynamic Location Scale Models*, July 2018

CASTILLO Mark Lorenzo, *Simulation and semiparametric estimation for finite-activity Lévy driven Ornstein-Uhlenbeck process*, February 2018

DREVINSKAS Edvinas, *Robust estimator for semi-parametric dynamic location scale models*, February 2018

MIGLIOLI Cesare, *Prediction Divergence Criterion for Model Selection in the Logistic Regression*, February 2018

RIEDO Steve, *Statistical Scoring Models in Derivative Trading*, February 2018

RYTSAR Romana, *Modelling mortality rate: Generalized Linear and Additive Models (GLAM) and Bayesian approach*, February 2018

SHENG Jie, *Statistical forecasting for monthly coffee sales -- in the context of Nespresso supply chain*, February 2018

WÜST Lionel, *High Frequency Pairs Trading in realistic situation*, February 2018

2017

BERNARDO Melissa, *Autoregressive Condition Duration Models: a numerical analysis of semi- and parametric estimation*, September 2017

BLANC Guillaume, *Flexible Modeling of the Random Effects in a Generalized Linear Mixed Model*, August 2017

JIANG Chaonan, *Saddlepoint techniques for spatial autoregressive micro panel data models with fixed effects: theoritical derivation*, June 2017

GASSMANN Barbara, *Prédiction à court terme de la demande d'électricité*, February 2017

NAAMAN Moriya Yasmin, *Applied asymptotics: case-studies in spatial data analysis*, February 2017

MOZGOVOY Vadym, *Metropolis-Hastings MCMC for univariate and bivariate Bayesian Lasso Regression in the steroid detection context*, January 2017

2016

GUMOWSKI Marc, *Yield Curve Estimation using Dynamic Semiparametric Factor Model and its Implementation in R*, December 2016

LAVDA Frantzeska, *A Study of Recurrent neural networks (RNNs) in univariate and multivariate time series*, December 2016

MOOR Alban, *Frequency domain bootstrap methods for short length time series*, October 2016

HAMMAD Salim, *Monte Carlo Study of a New Model Selection Algorithm for High Dimensional Problems in a Longitudinal Setting*, August 2016

MPORAMAZINA Desir, *Marketing Analytics and Cluster Validity: Evaluation of the gap statistic under hierarchical clustering and Poisson clusters*, April 2016

PARFENOV Fedor, *Internship at Expedia Inc: Deduplication of a Hotel Database Using the Expectation-Maximisation Algorithm and Fuzzy Matching on Text*, March 2016

2015

BAKALLI Gaetan, *A Multivariate Model for Latent Lazy Random Walks with Jump Processes: With Application to High-Frequency Finance*, November 2015

WETTSTEIN Steen, *Indicateurs conjoncturels avancés pour l'économie genevoise*, September 2015

QUAINI Alberto, *Robust approaches to the Lasso*, August 2015

SPAENNI Pascal, *Business risk analysis - a hybrid approach using the Genetic Algorithm and Discriminant Analysis*, August 2015

STALDER Odile, *Computationally Efficient Estimation of Gene-Environment Interactions when the Genetic Component is Multivariate and Complex*, August 2015

BODELET Julien, *Saddlepoint Approximations for Time Series Models*, June 2015

EBERT Irina, *Auto-Copulae for Modelling Serial Dependence and Estimation of Value at Risk for Univariate Time Series*, January 2015

JAVANMARDI Neda, *Block thresholding Multivariate Financial Time Series to detect crashes*, January 2015

ZOOKHUU Munkhzul, *Analyzing Repreated Measures Data from a Complex Survey: Comparisons of different Methods of Analysis for exploring factors affecting women's attitudes towards domestic violence*, January 2015

2014

DELFIM Jean-Christophe, *Matrix-Valued Time Series: Advanced Metrics* Implementations and Application to Financial Data including Corporate Social Responsibility Variables, August 2014

KALDINA Olga, *Low-rank penalized matrix approximation as a new approach to Sparse Principal Component Analysis*, April 2014

RONG Zhicheng, *Dynamic Long/Short Portfolio Optimization -- With the Omega Ratio and Lead-Lag Indicator*, March 2014

2013

GARIN Vincent, Can we predict SNP Genotypes from Plant Images by applying Pattern Recognition Techniques? A Case study in Pepper, December 2013

NAMUKASA Esther, *Robust generalized estimating equations for Poisson responses*, December 2013

ZHU Yanwen, *Comparison of common spaces in Descriptive analysis of Matrix-Valued Times-Series*, September 2013

ORSO Samuel, *Robust Estimation of Bivariate Copulas*, August 2013

CORREA SHOKICHE Carlos, *Multivariate extension for Wavelet-based Statistical Parametric Mapping*, February 2013

AUDA Marie, *Variable selection strategies for large number of covariates: an illustration with the ZIP model*, January 2013

BRANCA Mattia, *An Analysis of Implementations of Varying-Coefficient Models*, January 2013

DRAGAN Sanda, *Optimal Design for regression models with random coefficients*, January 2013

MILI Nabil, *Robust Model Selection*, January 2013

SAUSER Julien, *Transformation in Nonparametric Regression for Log-Normal Distribution*, January 2013

WU Chunhua, *Study of D-efficiency of experimental designs with respect to contamination on the design points: the case of polynomial regressions*, January 2013

2012

FROSSARD Jaromil, *Prévisions pour les modèles linéaires généralisés robustes: étude Monte-Carlo d'un nouvel estimateur*, November 2012

DE CASTRO Carlos Antonio, *Finalizing the Development of a Tool for Analysis of Product Guidance Tests*, September 2012

FLORES AGREDA Daniel, *Prediction and Standard Error Estimation for Random Effects in Generalized Linear Mixed Models*, February 2012

MOLINARI Roberto C., *Robust Wavelet Variance Estimation: a semi-parametric approach*, February 2012

Related publication: Guerrier, S., Molinari, R., & Victoria-Feser, M.-P. (2014). Estimation of time series models via robust wavelet variance. *Austrian Journal of Statistics*, *43*(4), 267–277. https://doi.org/10.17713/ajs.v43i4.45

ABOSHYAN Shahandukht, *Uniform Mixture Designs and D-Optimality*, January 2012

ROTHEN Stéphane, *Impact of Extreme Values on Residuals in Linear Mixed Models*, January 2012

TAUSHANOV Zhivko, *Excess Volatility: the Role of Agents' Heterogeneity and Memory*, January 2012

2011

TURBATU Laura, *On the robustness properties of empirical Bayes with an application to the Fay-Herriot model*, December 2011

AVELLA MEDINA Marco, *The Robust Nonnegative Garrote for Generalized Linear and Additive Models*, July 2011

McGILL James A., *High Frequency Financial Data Modelling using Hawkes Processes & Extreme Value Theory*, January 2011

Related publication: Chavez-Demoulin, V., & McGill, J. A. (2012). High-frequency financial data modeling using Hawkes processes. *Journal of Banking & Finance*, *36*(12), 3415–3426. https://doi.org/10.1016/j.jbankfin.2012.08.011

2010

GLAUSER Jérôme, *Precision of goodness-of-fit and parameters estimation in longitudinal structural equation modeling: an application to Latent State-Trait and Latent Growth Curve Models*, August 2010

Related publication: Courvoisier, D. S., Agoritsas, T., Glauser, J., Michaud, K., Wolfe, F., Cantoni, E., Perneger, T. V., & Finckh, A. (2012). Pain as an important predictor of psychosocial health in patients with rheumatoid arthritis. *Arthritis Care & Research*, *64*(2), 190–196. https://doi.org/10.1002/acr.20652

AEBERHARD William, *Power and Sample Size Calculation in a Negative Binomial Regression Framework - The Power of Falls: Might the "Holy Trinity" help?*, June 2010

CEKIC Sezen, *Lien entre activité neuronale des sites cérébraux de l'amygdale et du cortex orbito-frontal en réponse à une prosodie émotionnelle - Investigation par la Granger-Causalité*, June 2010

JHABVALA Dravasp, *A simulation study of the effectiveness of Generalized Procrustes Analysis for sensory panels*, June 2010

NICOLET Mathieu, *Cluster Analysis of large datasets involving categorical variables using hierarchical and optimization partitioning techniques*, May 2010

2009

CENTENO GIL Elia Adriana, *Categorical Data Analysis and its Application in Social Research, LHR databases*, September 2009

YAPU QUISPE Luis Panfilo, *Portfolio Robust Prediction*, March 2009

EXPERT Paul, *Numerical Comparison of Two Wavelet-Based Approaches to Solve Wicksell's Inverse Problem*, January 2009

THEODOLOZ Mélanie, *Modèles linéaires généralisés à variables latentes et sur-représentation de zéros*, January 2009

TSOUMTSA NGOMPENG Virginie, *A Report on the Construction of a Summary Index Scoring ICT Performance in an Economic Perspective Worldwide*, January 2009

2008

MARTIN Danielle, *The Position of the Swiss Legislators and the Cantons on a Left-right Scale Using Bayesian Inference*, December 2008

PHILLIPS Samantha, *Regional and Global Estimates for Millennium Development Goals' Indicator 3.2 : Share of Women in Wage Employment in the Non-Agricultural Sector*, August 2008

SALAZAR SERRUDO Lucas, *A Robustness Study of Heckman's Model*, August 2008

UNGIL Carlos, *Efficient Monte Carlo and Quasi-Monte Carlo Pricing of Multi Barrier Reverse Convertibles*, August 2008

TRAN Ngoc-Bich, *Capabilities and Wellbeing: A Generalized Linear Latent and Mixed Model Analysis*, July 2008

D'ACREMONT Mathieu Cyril, *How to Predict Risk in a Multiple Stimulus-Reward Environment ?*, June 2008

Related publication: d'Acremont, M., Gilli, M., & Bossaerts, P. (2009). Chapter 22 - Predicting risk in a multiple stimulus-reward environment. In: J.-C. Dreher, & L. Tremblay (Eds.), *Handbook of Reward and Decision Making* (pp. 459–474). Academic Press. https://doi.org/10.1016/B978-0-12-374620-7.00022-4

DUPUIS LOZERON Elise, *Robust Estimator for Constrained Covariance Matrix in the Case of Confirmatory Factor Analysis*, June 2008

Related publication: Dupuis Lozeron, E., & Victoria-Feser, M. P. (2010). Robust estimation of constrained covariance matrices for confirmatory factor analysis. *Computational Statistics & Data Analysis*, *54*(12), 3020–3032. https://doi.org/10.1016/j.csda.2009.08.014

FONTAINE Delphine, *Analyse de données issues d'Electroencéphalogrammes (EEG) : comparaison de résultats obtenus par des méthodes actuelles et par des méthodes ondelettes*, June 2008

PESCIA Gregory, *Adjusted Mixture Designs: An alternative for experiment with mistures and process variables*, June 2008

TAKANE Marina, *Robust Numerical Methods for Modelling Interest Rates*, June 2008

Related publication: Loisel, S. & Takane, M. (2009). Fast indirect robust generalized method of moments. *Computational Statistics & Data Analysis*, *53*(10), 3571–3579. https://doi.org/10.1016/j.csda.2009.03.021

2007

COURVOISIER-GROSS Delphine, *Mixture Latent State Trait Models with Traits and States Covariates: Application and Simulation Studies*, September 2007

Related publication: Courvoisier, D. S., Eid, M., & Nussbeck, F. W. (2007). Mixture distribution latent state–trait analysis: Basic ideas and applications. *Psychological Methods*, *12*(1), 80–104. https://doi.org/10.1037/1082-989X.12.1.80

WORMSER David, P.-Salamin, *Comparison of Sampling Plans for the Monitoring of Ecological Compensation Areas*, September 2007

ZEDINI Asma, *Poisson Hurdle Model. Towards a Robustified Approach*, September 2007

Related publication: Cantoni, E., & Zedini, A. (2011). A robust version of the hurdlemodel. *Journal of Statistical Planning and Inference*, *141*(3), 1214–1223. https://doi.org/10.1016/j.jspi.2010.09.022