Alena Skolkova

CERGE-EI, Politických vězňů 7, 111 21 Prague, Czech Republic
alena.skolkova@cerge-ei.cz https://askolkova.github.io/

EDUCATION

Ph.D., Economics & Econometrics 2023
Center for Economic Research and Graduate Education - Economics Institute (CERGE-EI) (expected)

M.A., Economics & Quantitative Methods 2015
European University at Saint Petersburg (EUSPb)
Thesis: Models of Economic Growth with Consumption Externalities

B.A., Economics 2013
Higher School of Economics (HSE)
Thesis: Endogenous Entrepreneurship under Monopolistic Competition

FIELDS

Econometric Theory, Machine Learning, Causal Inference

RESEARCH PAPERS

"Ridge Model Averaging" (Job Market Paper) (paper)

Model averaging is an increasingly popular alternative to model selection. Ridge regression and model averaging serve a similar purpose, minimization of a mean squared error through shrinkage, though in different ways. In this paper, I propose the ridge-regularized modifications of Mallows model averaging (Hansen, 2007, Econometrica, 75) and heteroskedasticity-robust Mallows model averaging (Liu & Okui, 2013, The Econometrics Journal, 16) to utilize the capabilities of averaging and ridge regularization simultaneously. Via a simulation study, I examine the finite-sample improvements obtained by replacing least-squares with a ridge regression. Ridge-based model averaging is especially useful when one deals with sets of moderately to highly correlated predictors because the underlying ridge regression accommodates correlated predictors without blowing up estimation variance. A toy theoretical example shows that the relative reduction of the mean squared error is increasing with the strength of a correlation. I also demonstrate the superiority of the ridge-regularized modifications via empirical examples, focused on wages and economic growth.

"Elastic-Net for Instrumental Variables Regression" (extended abstract)

Instrumental variables (IV) are commonly applied for identification of treatment effects and policy evaluation. The use of many informative instruments improves the estimate accuracy. However, dealing with high-dimensional sets of instrumental variables of unknown strength may be complicated and requires instrument selection or regularization of the first-stage regression. Currently, lasso is established as one of the most popular regularization techniques relying on the assumption of approximate sparsity. I investigate the relative performance of the lasso and elastic-net estimators for fitting the first stage as part of IV estimation. As elastic-net involves ridge-type regularization, it generally improves upon lasso in finite samples when correlations among the instrumental variables are not negligible. I claim the asymptotic equivalence of the IV estimators that employ the lasso and elastic-net first-stage estimates. Via a Monte Carlo study I demonstrate the robustness of the IV estimator based on the elastic-net first-stage estimates to correlation among the instruments, and deviations from approximate sparsity. Finally, I provide an empirical example that employs the elastic-net IV estimator for estimation of return to schooling.

PUBLICATIONS

"Many instruments: implementation in Stata", (with Stanislav Anatolyev*) Stata Journal*, 2019

RESEARCH AND TEACHING ASSISTANTSHIP

Research Assistant to Professor Stanislav Anatolyev, CERGE-EI	2017 -
Teaching Assistant for Econometrics-1 (1st year core Ph.D. course), and Time Series Econometrics (2nd year field Ph.D. course), CERGE-EI	2019 - 2020
Teaching Assistant for Econometrics-1 (3rd year core B.A. course), HSE	2013
Research Assistant Centre for Market Studies and Spatial Economics (scientific supervisor – Jacques-François Thisse), Moscow, Russia	2012 - 2013
Research Assistant Laboratory of Economic-Mathematical Research (scientific supervisor – Vladimir Matveenko), Saint Petersburg, Russia	2011 - 2012

PRESENTATIONS

11th Nordic Econometric Meeting, Aarhus University, Denmark – September 2022

24th International Conference on Computational Statistics, University of Bologna, Italy – August 2022

6th conference of the Deutsche Arbeitsgemeinschaft Statistik, Hamburg, Germany – March 2022

10th Biennial Conference of the Czech Economic Society, Prague, Czech Republic – December 2020

31st European Meeting of Statisticians, University of Helsinki, Finland – July 2017

15th International April Conference, Higher School of Economics, Moscow, Russia – April 2014

2nd Congress of the New Economic Association, Suzdal, Russia - 2013

14 International April Conference, Higher School of Economics, Moscow, Russia – April 2013

GRANTS, AWARDS, AND SCHOLARSHIPS

Charles University Grant Agency (GA UK) Grant, Principal Investigator	2020 - 2022
Performance Stipend, CERGE-EI	2017
Scholarships for the best academic, EUSPb	
> Charity Fund for children and young people "Stupeni", Russia	2014 – 2015
> British Petroleum	2015
> ExxonMobil	2015
Full Fee Waiver Scholarship and Individual Scholarship, EUSPb	2013 - 2015
Winner of the competition "The Best Undergraduate Thesis 2013", Gaidar Institute for Economic Policy, Russia	2013
Performance Stipend, HSE	2010 - 2013

OTHER TRAINING

14th Advanced Summer School in Economics and Econometrics, "Model Selection and Averaging in Econometrics" by Bruce Hansen, University of Crete, Greece, 2019

Workshop "Model Selection, Regularization, and Inference", Vienna University, Austria, 2018

Advanced course “International Trade” by Peter Neary, Higher School of Economics, Moscow, Russia, 2013

Summer School of the London School of Economics, “IO and Introduction to Competition Policy”, London, UK, 2013

REFERENCES

Stepan Jurajda. CERGE-EI
stepan.jurajda@cerge-ei.cz

Veronika Selezneva, CERGE-EI
veronika.selezneva@cerge-ei.cz

Stanislav Anatolyev, CERGE-EI
stanislav.anatolyev@cerge-ei.cz