

Vira Semenova

Contact information	MIT Department of Economics 50 Memorial Drive, E52-502 Cambridge, MA 02142 vsemen@mit.edu +1 617 4803864	
Education	PhD Candidate in Economics, MIT Majors: Econometrics, Game Theory Minors: Machine Learning, Statistics	2013 – 2018
	MPhil in Economic Research, University of Cambridge, UK	2012 – 2013
	Bachelor in Mathematics and Statistics, Taras Schevchenko National University of Kyiv, Ukraine, with honors	2008 – 2012
Fellowships	Unicredit and Universities PhD Scholarship, 2 nd Edition Park City Summer School “Mathematics of Data” travel grant	2013 – 2015 2016
Research Projects	<p>Adaptive GMM Estimation with Missing Data</p> <p>I consider GMM estimator with a high-dimensional nuisance parameter in presence of a partially missing variable. For a class of moments that are linear in the missing variable, I propose an imputation for the response that retains validity, orthogonality, semiparametric efficiency of the original moment condition.</p> <p>This method can be used for high-dimensional logistic regression with partially missing response, and high-dimensional treatment effects with partially missing outcome or treatment.</p> <p>Best Linear Predictor in Stratified Sampling (joint with Victor Chernozhukov and Philippe Rigollet)</p> <p>We propose consistent asymptotically normal (CAN) efficient estimator of best linear predictor in the sample with partially missing response variable. It is robust to model misspecification. Namely, the estimator retains its properties in the regime when inverse probability weighting is not CAN due to the correlation between indicator of observance and propensity score estimation error. In addition, we use new asymptotic methods that allow the propensity score to converge to zero at a sufficiently slow rate.</p>	

Prediction of Kidney Acceptance in Kidney Allocation Data

(joint with Nikhil Agarwal and Victor Chernozhukov)

Using 4 GB data of national kidney allocation results, we predict the probability of acceptance a cadaveric kidney by a patient using biological, demographic and other characteristics of donors and patients. We have found the best linear combination of logistic lasso and random forest to predict the outcome.

Achievements	2 nd place in International Mathematics Competition Blagoevgrad, Bulgaria	2011
	2 nd place in All-Ukrainian Mathematics Competition for college students, Lviv, Ukraine	2010
	2 nd place in IV International Zhautykov Mathematics Olympiad, Almaty, Kazakhstan	2008
	IMO Ukrainian Team Selection Final Round (top 12) Participant	2008
Coding skills	R (Advanced), Matlab (Advanced), Python (Intermediate)	
Coding projects	Student-school assignment for Boston Public Schools https://github.com/vsemenova/Student-School-Assignment-	
Languages	English (fluent), French (intermediate), Russian, Ukrainian	
Selected Courses taken at MIT	Machine Learning, Theory of Probability, High-Dimensional Statistics, Information and Inference, Mathematics of Machine Learning, Nonlinear Econometrics, New Econometric Methods, Game Theory (Grade: A)	