Research Statement

Gleb Romanyuk

Contact Information

Littauer Center,
1805 Cambridge St.
Cambridge, MA 02138

Email: glebromanyuk@g.harvard.edu
Web: scholar.harvard.edu/gromanyuk
Phone: (617) 308-8394

My primary research interests lie in the area of microeconomic theory, market design, the economics of digitization, and industrial organization. My research is motivated by the observation that in order for a market to work well, it is necessary to have clear rules of game that foster value creation and inhibit perverse behavior, such as deception, rent-seeking, and others. The advances in IT technology and the spread of communication devices led to the rise of companies whose business model relies on platform or market design.[1] How should these markets be designed? An attractive feature of digital marketplaces is that the designer has much control over the marketplace operations and potentially accumulates detailed transactions data. This presents an opportunity for conducting research and for creating new operations and business strategies.

Most of my research up to date has focused on the market design in online platforms, matching markets and auction design.

In my job marker paper "Ignorance is Strength: Improving the Performance of Matching Markets by Limiting Information" I study the role of information intermediation in matching markets. Although in markets with pronounced heterogeneity the provision of information is generally perceived to be critical for efficiency, I show that increased observability at the search stage does not necessarily lead to market improvement. The paper develops a framework for analyzing the platform's design decisions on the disclosure of the participants' characteristics to each other. The model is a persuasion problem on the seller side of the market where sellers have preferences over buyers and limited capacity. I show that full disclosure is Pareto-suboptimal for buyer and seller surpluses. Increased observability of buyer characteristic induces sellers to cream-skim, that is to reject inefficiently many buyers. As a result, limiting information improves efficiency. The particular form of the optimal disclosure policy depends on the details of the seller payoff function and the structure of the private information, which I characterize in the paper.

In a working paper "A Price Theoretic Model of Search Intermediation by Online Platforms" coauthored with Greg Lewis and Albert Wang, we analyze the incentives of online search intermediaries in environments where buyers must compete for limited supply (e.g.

[1] E.g., 19% of the total US adult population has engaged in a sharing economy transaction (2015, PWC); by 2025, online talent platforms could boost global GDP by $2.7 trillion (McKinsey, 2015).

airlines, hotels). We find conditions on the primitives when an intermediary who maximizes seller revenue will optimally maintain positive search costs in order to steer searchers to the market where they generate the most revenue.

Another working paper "Position auctions with endogenous supply" coauthored with Sergei Izmalkov and Dilya Khakimova, studies the auction design for online advertising market. We consider a multi-object private values setting with quantity externalities. For example, the likelihood a customer will respond to an advertisement is higher the fewer other advertisements are shown; a spectrum license is more valuable the fewer licenses are being allocated. We solve the problem of finding revenue maximizing and efficiently allocating auctions in such a setting. We demonstrate that auctions currently used for allocating advertising positions are suboptimal and offer simple designs that can implement (or approximate) optimal and efficient auctions under quantity externalities.

Going forward, I plan to continue working on questions of marketplace design and platform strategy. One important marketplace design question I am interested in is the degree of market centralization. Being an old question in the history of economic thought (going back to Hayek and Lerner), it has recently become relevant again after the rise of digital marketplaces, such as Uber and Airbnb. One interesting way to approach the question of centralization is to consider the tradeoff between information elicitation and transaction costs, which was informally introduced in Einav, L., Farronato, C. and Levin, J. (2016) Peer-to-Peer Markets, *The Annual Review of Economics.* For example, eliciting Uber passengers' preferences over cars have little marginal benefit relative to the hassle costs associated with asking questions and making passengers search. The resolution of this tradeoff determines the degree of platform centralization and is a key design decision that drives the success of the platform. Despite its significance, there are important subtleties that have to be understood before we are ready to give practical advice. What side of the market should do the work to provide information for the match? Unlike price, information is multi-dimensional, and in particular, a platform participant possesses information both about his match payoff and the counter-party's payoff. How does it affect the elicitation policies?

Another interesting research topic is endogenous network effects. In many cases, a company has a strategic decision to choose the extent to which the affiliated entities (customers, suppliers) are insulated from each other (Hagiu, A. and Wright, J. (2015) Marketplace or reseller?, *Management Science*). For example, Walmart can choose the fraction of the inventory risk borne by its suppliers, and this determines the extent to which the suppliers care about the Walmart customer base. That is, the company can choose the strength of the network effects, and so can choose whether to be a reseller or a two-sided market. Similar logic applies to Uber drivers who can be more or less insulated from the variations in demand, and this determines the composition of the driver base. The strength of network effects is an important strategic decision, and an increasing number of companies shift their business model into some sort of platform. It is critical to understand what market condition are fruitful for the platform business model and what mechanisms determine the strength of network effects.

Given the abundance of data available in the digital economy, as well as other sectors affected by the digitization, I am open to doing empirical work on these subjects.

Teaching Statement

Gleb Romanyuk

Contact Information	Littauer Center, 1805 Cambridge St. Cambridge, MA 02138	Email: glebromanyuk@g.harvard.edu Web: scholar.harvard.edu/gromanyuk Phone: (617) 308-8394

In the past, I have had teaching experience on several occasions:

- Three times as a teaching fellow in an undergraduate-level econometrics class
- Two times in an advanced undergraduate-level game theory class taught by Professor Drew Fudenberg
- Graduate level economic theory of social networks taught by Professor Matt Jackson.

For my teaching approach, I prefer interactive environment; teaching by example that facilitates the understanding of complex ideas. I want to make sure students see the purpose of them being in every class. Quoted from course evaluations from Spring 2016 econometrics course (see score evaluation attached below):

- "He is always trying to make section fun, interactive, and helpful. It was really great when he gave explanations that were different from lecture/the book. He also fields stupid questions very well. Someone asked what a p-value was and he didn't even bat an eye- I was impressed."
- "I learned most of this course through the section. Gleb was good at going through the material at the level that is required for understanding unlike during lecture."

As a prospective assistant professor, I can teach

- core courses in microeconomics and strategy;
- MBA electives on market design, platform economics, digital economy and two-sided markets;
- PhD courses on microeconomics, industrial organization and market design.

-

ECON 1123: Introduction to Econometrics

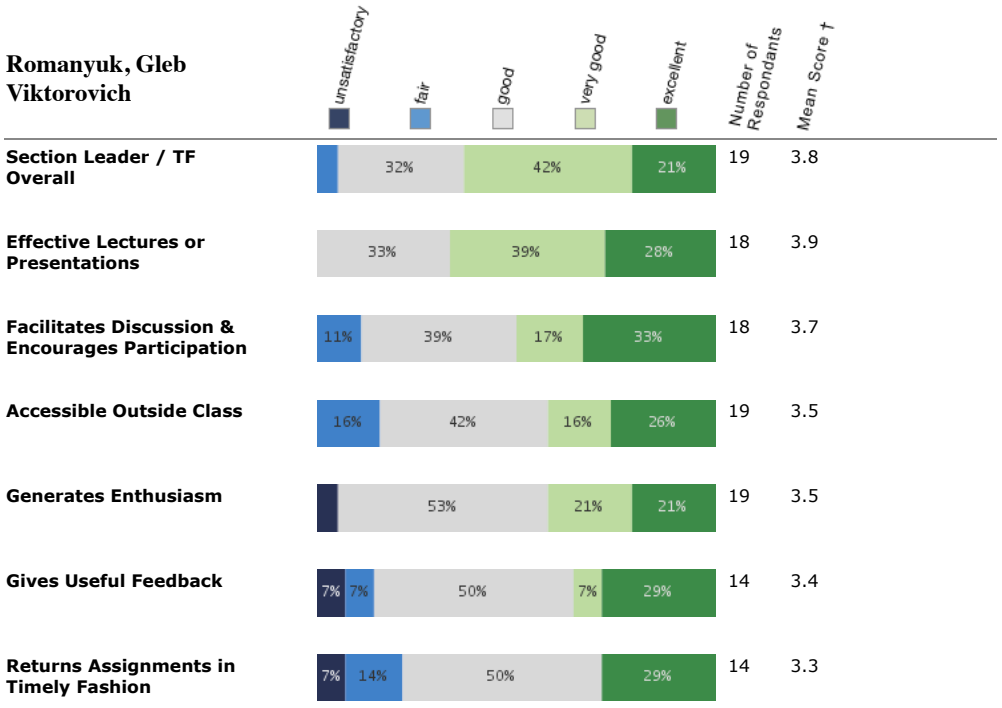
Enrollment: 89 Evaluations: 73 Response Rate: 82.02%

Spring 2016

Course Eval. Summary | Instructor/TF Eval. Summary | View Comments By Question | View By Respondent | Print Full Reports

Select Person: Romanyuk, Gleb Viktorovich update view

Romanyuk, Gleb Viktorovich



-

ECON 1052: Game Theory and Economic Applications

Fall 2014

Enrollment: 24 Evaluations: 17 Response Rate: 70.83%

Course Eval. Summary | Instructor/TF Eval. Summary | View Comments By Question | View By Respondent | Print Full Reports

Select Person: Romanyuk, Gleb Viktorovich update view

Romanyuk, Gleb Viktorovich	unsatisfactory	fair	good	very good	excellent	Number of Respondants	Mean Score †
Section Leader / TF Overall	8%	31%	38%		23%	13	3.8
Effective Lectures or Presentations	10%	20%	40%		30%	10	3.9
Facilitates Discussion & Encourages Participation		50%	30%		20%	10	3.7
Accessible Outside Class	8%		50%		42%	12	4.3
Generates Enthusiasm	17%	42%		25%	17%	12	3.4
Gives Useful Feedback	42%	17%		25%	17%	12	3.2
Returns Assignments in Timely Fashion	8%	8%	50%		33%	12	4.1

-

ECON 2098: Topics in Economic Theory

Enrollment: 32 Evaluations: 23 Response Rate: 71.88%

Fall 2015

Course Eval. Summary | Instructor/TF Eval. Summary | View Comments By Question | View By Respondent | GSAS Module | Print Full Reports

Select Person: Romanyuk, Gleb Viktorovich update view

Romanyuk, Gleb Viktorovich	unsatisfactory	fair	good	very good	excellent	Number of Respondants	Mean Score †
Instructor Overall	17%		39%		44%	18	4.3
Effective Lectures or Presentations	17%				83%	6	4.8
Accessible Outside Class	8%		23%		69%	13	4.6
Generates Enthusiasm	12%		12%		75%	8	4.6
Facilitates Discussion & Encourages Participation	20%				80%	5	4.6
Gives Useful Feedback		20%		33%	40%	15	4.1
Returns Assignments in Timely Fashion	12%		24%		65%	17	4.5