

Elizaveta Gonchar

ECONOMIST | GEOSPATIAL ANALYST

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EDUCATION

PhD in Economics — Georgia Institute of Technology (Georgia Tech) (Atlanta, GA) — GPA: 4.0/4.0 Aug. 2024

Dissertation: "Spatial Dimensions of Economic Modeling: Interdisciplinary Approaches to Labor, Trade, and Networks"

Advisor: Dr. Usha Nair-Reichert

Major Fields: International Trade, Development Economics | **Minor Field:** Quantitative Psychology

MS in Geographic Information Science & Technology — Georgia Tech (Atlanta, GA) — GPA: 4.0/4.0 May 2022

Advisor: Dr. William J. Drummond

MS in Economics — Georgia Tech (Atlanta, GA) — GPA: 4.0/4.0 May 2019

MA in Economics — Indiana University (Bloomington, IN) — GPA: 3.53/4.0 Jan. 2018

Concentrations: Microeconomic Theory, International Trade

MSc in Economics — Barcelona Graduate School of Economics (Barcelona, Spain) July 2015

Masters of Science in Economics and Finance awarded by Universitat Pompeu Fabra.

BS in Economics — Arizona State University (Tempe, AZ) — GPA: 3.64/4.0 Aug. 2014

Minors: Mathematics, German

Certificate: International Business

Study Abroad: London School of Economics Summer Program (London, England) -- Summer Program 2013

-- Courses: Economics of European Integration, International Economics.

ASU Managerial Accounting (Florence, Italy) -- Summer 2012

RECENT EXPERIENCE

Research Analyst — Carnegie Mellon University (Remote) Aug. 2023 - Present

Remote independent consultant for the Block Center for Technology and Society.

Providing analytical services for the Workforce Insights Tool on R.K. Mellon project at the CMU's Block Center.

Role consists of providing economics, analytics, and data visualization expertise to support the continued development of Workforce Insights Tool and other analytical resources for workforce supply chains.

Graduate Research Assistant — School of Public Policy - Georgia Institute of Technology (Atlanta, GA) Oct. 2022 - Aug. 2023

Assisting with NSF-funded project titled "*National Network for Critical Technology Assessment: A Pilot*" under Dr. Cassidy Sugimoto, collaborated with Dr. Christophe Combemale of Carnegie Mellon University.

Program objective: Develop assessment capabilities for critical technologies for U.S. competitiveness and present insights to U.S. legislators.

Personal contribution: Developed novel analytical methods and decision support toolkit for situational awareness and identification of skill supply and flow for every metropolitan labor market and state of the United States.

Application space of these methods: Include identifying and resolving workforce constraints on multibillion-dollar public and private investments in decarbonization and advanced manufacturing, currently supporting resource allocation and strategy for multiple U.S. federal executive branch agencies (DoD, NSF, U.S. Manufacturing Institutes), with further engagements being developed for other agencies, multiple large private firms and regional as well as national training organizations.

Materials developed: Workforce Insights Tool. Drafted "*Workforce Insight Tool Methods Report*" outlining the methods and application developed.

Remote Consultant — University of Denver (Remote)

Feb. 2023

Remote consultant for research fellow in the Sié Chéou-Kang Center and Oxfam America Joint Postdoctoral Fellowship Program.

Tasks: Collected and cleaned geographic data for mining companies in select African countries and provided corresponding maps.

Graduate Teaching Assistant — School of Economics - Georgia Institute of Technology (Atlanta, GA)

May - Dec. 2022

Course Assisted: ECON 2101, ECON 2105, ECON 4060, ECON 6431

Graduate Teaching Assistant — School of Economics - Georgia Institute of Technology (Atlanta, GA)

Aug. 2017 - Dec. 2021

Courses Taught: ECON 2101: The Global Economy (Online)

- 2 Semesters: Summer 2020 (53 students), Spring 2021 (73 students)

Courses Assisted:

- Undergraduate: ECON 2100, ECON 2101, ECON 2105, ECON 2106, ECON 3110, ECON 4350, ECON 4415, ECON 4803
- Graduate: ECON 6106, ECON 7012, ECON 7013

SKILLS

Analytical Software: Stata, ArcGIS Pro, ArcMap, ERDAS Imagine, QGIS, Matlab

Programming Languages: R, Python (Core, ArcPy), SQL

Foreign Languages: -- Native proficiency: English and Russian.

-- Limited working proficiency: German and Ukrainian.

Productivity Software: \LaTeX , InDesign, Illustrator, ChatGPT

HONORS & AWARDS

Apr. 2022	Economics Graduate Student Instructor of the Year , Center for Teaching and Learning (CTL)	Atlanta, GA
Nov. 2021	GIS Day Map Competition Winner , School of City and Regional Planning	--
Aug. 2017 - May 2021	President's Fellowship Award , Georgia Institute of Technology	--
Apr. 2021	Senator of the Year , Graduate Student Government Association	--
Apr. 2020	Rookie Senator of the Year , Graduate Student Government Association	--
Feb. 2014	1st Place in Microeconomics, Macroeconomics, International Business , Phi Beta Lambda Winter Leadership Conference	Tempe, AZ

RESEARCH Reports

Securing America's Future: A Framework for Critical Technology Assessment

Contributing author in section "Integrated Summary: Semiconductors" of this report for the National Network for Critical Technology Assessment.

Working Papers

Build It and They Will Come? US Regional Labor Composition and Readiness to Meet Skill Demand Shocks from CHIPS and Science (Co-Authors: Christophe Combemale and Krishnan Ramayya)

Abstract: Expansionary industrial policies, such as the CHIPS and Science Act, are followed by notable surges in labor demand within the industries they target. The CHIPS and Science Act, for example, has led to the announcement of at least 43,580 jobs in the Semiconductors & Electronics industry. Recognizing the imperative to address such labor demand shocks, we propose a novel operational methodology. To substantiate the efficacy of our approach, we consider the semiconductor manufacturing industry in the context of the CHIPS and Science Act as a representative case study, exploring diverse strategies for the construction of skill profiles for industry-related occupations. This methodology, informed by economics, assesses potential supply-demand skill discrepancies, and incorporates factors such as the intertemporal occupational rates of transition and regional wage distributions. By analyzing the skill compositions inherent to industry-related occupations, our approach provides a strategic advantage to policymakers and industry stakeholders, enabling them to identify specific U.S. locales with the requisite skill profiles and potential wage structures. Furthermore, the practical application of our methodology is embodied in the Workforce Insights Tool, which offers comprehensive labor insights.

Effect of COVID-19 on Domestic Trade Flows: A Spatial Autoregressive Approach to Estimate the Response of Colombian Trucking Flows

Abstract: This paper investigates the impact of the COVID-19 pandemic on domestic trade flows in Colombia, focusing on how the pre-pandemic trade exposure of municipalities influenced their economic response to the shock. I construct a novel measure of municipal-level trade exposure using factor analysis, capturing key dimensions such as proximity to transportation infrastructure and connectivity to international markets. Employing a spatial autoregressive model, I find that municipalities with higher levels of trade exposure experienced larger declines in both domestic trade outflows and inflows following the implementation of COVID-19 containment policies. The results also indicate significant spatial spillovers, with the trade flows of neighboring municipalities influencing each other. These findings highlight the heterogeneous effects of the pandemic across regions and the role of trade linkages in propagating economic shocks. Furthermore, I explore the underlying mechanisms driving these effects by examining the differential impact of the pandemic on municipalities that were net exporters versus net importers prior to the crisis. The analysis reveals that net exporting municipalities suffered larger declines in trade flows compared to net importers, suggesting that the disruption of global supply chains disproportionately affected regions more integrated into international trade networks. Overall, this paper underscores the importance of considering subnational variation and spatial interdependencies when examining the impact of global crises on trade flows and provides new insights into the resilience of domestic trade networks in the face of external shocks.

Trade in the Spotlight: Enhancing Gravity Model Predictions with Nightlights- and Population-Weighted Distance Measures (Co-Author: Ian Helfrich)

Abstract: The distribution of consumers and producers across and within countries significantly influences the pattern of economic production. In this paper, we investigate the implications of spatial factors on gravity model estimates of trade by introducing a novel geodesic distance measure between countries, using nightlights-weighted and population-weighted centroids as endpoints for bilateral distance measures. Traditional gravity models of international trade have relied on time-invariant measures of bilateral distance between nations, including distance between national capitals, geographic centroids, and weighted centroids based on the largest population centers. By employing annual global population and nighttime lights density rasters to identify the central spatial tendency of producers and consumers, we estimate time-varying directional distance measures between origin-destination pairs. Our approach demonstrates increased accuracy and adaptability across various administrative boundaries, offering improved comparability across different research applications. The paper showcases the application of this method to the United States interstate commerce and global trade flows, highlighting the flexibility and reliability of our approach for a variety of empirical considerations.

EXTRACURRICULAR

Institutional Involvement

Oct. 2022 & Mar. 2023	Application Reviewer , President's Undergraduate Research Award (PURA) Salary Award	Atlanta, GA
FY 2022 & 2023	Graduate Student Representative , Mandatory Student Fee Advisory Committee	--
Sep. 2019 - Aug. 2021	Graduate Senator , Joint Finance Committee	--
FY 2021	Graduate Student Member , Joint Policy Response Committee	--
FY 2021	Graduate Student Member , Joint Campus Organizations Committee	--
FY 2020	Graduate Student Representative , Parking and Transportation Advisory Committee	--

Organizational Involvement

Omicron Delta Epsilon — Georgia Institute of Technology (Atlanta, GA)	Feb. 2019 - Present
Leadership Position: <ul style="list-style-type: none">- Vice President of Events -- 2022	
Graduate Student Government Association — Georgia Institute of Technology (Atlanta, GA)	Sep. 2019 - Sep. 2021
Leadership Position: <ul style="list-style-type: none">- Senator in Graduate Student Senate -- Sep. 2019 - Sep. 2021	
Phi Beta Lambda — Arizona State University (Tempe, AZ)	Jan. 2012 - May 2014
Leadership Positions: <ul style="list-style-type: none">- President -- 2014- Vice President of Communications -- 2013 - 2014- Executive Vice President -- 2012 - 2013- Director of Operations of Business Skills Day 25 -- 2013	
ASU German Club — Arizona State University (Tempe, AZ)	Sep. 2011 - May 2014
Leadership Position: <ul style="list-style-type: none">- Vice President of Events -- 2012 - 2013	
ASU Russian Student Association — Arizona State University (Tempe, AZ)	Nov. 2011 - May 2013
Leadership Position: <ul style="list-style-type: none">- President -- 2012 - 2013	